

Joint Forces Staff College
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“Dominant Land Forces for 21st Century Warfare”

by

LTC (P) Edmund J. Degen

U.S. Army

A paper submitted to the Faculty of the Joint Advanced Warfighting School in partial satisfaction of the requirements of a Master of Science Degree in Joint Campaign Planning and Strategy.

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Signature: _____

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Abstract

AirLand Battle doctrine driven by rigorous training, an all volunteer force, and an effectively integrated Joint Team produced a string of successes in conventional warfare against symmetrically equipped forces. In these operations, tactical aviation, including close air support and attack helicopters, proved decisive when combined with land power. Some symmetrical threats remain, but increasingly, opponents are seeking asymmetrical advantages, ranging from nuclear capability to irregular warfare. As a result, U.S. forces must be capable of responding anywhere along the spectrum of conflict from high intensity conventional warfare to stability support operations. The most likely threats over the near and mid terms are irregular forces operating predominantly on the ground in complex urban environments, with the potential of being equipped with weapons of mass destruction.¹ ***Therefore, across the range of possible contingencies the U.S. must establish an overarching security environment in order to successfully employ all elements of national power.***

Presently the United States and its coalition partners are attempting to establish conditions that will allow Iraq and Afghanistan to develop their own elements of national power in a way that is compatible with democracy and a free market economy. This in turn, will enable a stable and lasting peace. Setting these conditions has been difficult as the military tries to adjust from an effective high intensity force-on-force warfighting apparatus to a balanced force across the entire spectrum of operations. The well learned and rehearsed AirLand Battle doctrine does not apply consistently or cleanly to the war presently being fought. To attain the conditions being sought it may be time to focus national efforts on a different approach – a collective approach involving all elements of national power – an approach focused on the projection of security rather than military combat power. At the center of this proposal is the necessity to establish a reasonable level of security by using dominant land forces in such a way that all aspects of national power can be applied near-simultaneously; an idea critical not only to current operations, but also for success in military engagements across the continuum of operations in the 21st Century.

This thesis introduces the notion of *persistent security* that originates from dominant land power. Producing forces that can establish a persistently secure environment is the challenge frequently overlooked in the way the American military trains, thinks and approaches warfighting. It does not argue for or against transformation, but rather more clearly reveals the problem facing both the United States nation and its allies – it attempts to reach a basic understanding on how to prepare and operate. Through a more detailed discussion and in-depth analysis, it becomes obvious that the role of the military expands beyond those outlined in strategic documents. That role transcends current strategy and military capability and is accentuated by the likelihood that the U.S. is in the midst of an era of persistent conflict². This era demands a

¹ U.S. Army Training and Doctrine Command, *The Changing Operational Environment* (13 July 2007), by TRADOC G2, Briefing to the Chief of Staff of the Army (July 2007).

² General George Casey, Chief of Staff of the Army, National Press Club, 14 August 2007. GEN Casey termed the phrase “persistent conflict” often in Army circles but was first publically credited for it during the presentation at the National Press Club.

countervailing concept; a concept which may be captured by the use of dominant land power and the persistent security it yields. Dominant land power is characterized as a force that has the ability on to see first, know first, understand first and act decisively on the ground to counter threats to security and stability. It alludes to dominating on the ground where people live, where people have their aspirations, where the preponderance of the people in the entire world live, on the land.

This paper begins by discussing the logic behind a notion of persistent security and how land forces play a critical role in sustaining security. The paper then flows in to a discussion on the constant ebb and flow of firepower versus maneuver warfare to see how modern armies have evolved to meet the threats of their day. This historical vignette is then applied to recent lessons learned on the battlefields in order to garner a vision for how to adjust formations and methodologies for force employment in future wars. It is important to analyze how modern doctrinal principles came to be, whether as a result of the changing environment of warfare, budget constraints, or both. Lastly, the thesis argues for dominant land combat forces capable of instituting secure environments globally, thus allowing stability to flourish in these same environments.

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Chapter 1: A Notion of Persistent Security

Introduction

AirLand Battle doctrine driven by rigorous training, an all volunteer force, and an effectively integrated Joint Team produced a string of successes in conventional warfare against symmetrically equipped forces. In these operations, tactical aviation, including close air support and attack helicopters, proved decisive when combined with land power. Some symmetrical threats remain, but increasingly, opponents are seeking asymmetrical advantages, ranging from nuclear capability to irregular warfare. As a result, U.S. forces must be capable of responding anywhere along the spectrum of conflict from high intensity conventional warfare to stability support operations. The most likely threats over the near and mid terms are irregular forces operating predominantly on the ground in complex urban environments, with the potential of being equipped with weapons of mass destruction.³ ***Therefore, across the range of possible contingencies the U.S. must establish an overarching security environment in order to successfully employ all elements of national power.***

Presently the United States and its coalition partners are attempting to establish conditions that will allow Iraq and Afghanistan to develop their own elements of national power in a way that is compatible with democracy and a free market economy. This in turn, will enable a stable and lasting peace. Setting these conditions has been difficult as the military tries to adjust from an effective high intensity force-on-force warfighting apparatus to a balanced force across the entire spectrum of operations. The well learned

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and rehearsed AirLand Battle doctrine does not apply consistently or cleanly to the war presently being fought. To attain the conditions being sought it may be time to focus national efforts on a different approach – a collective approach involving all elements of national power – an approach focused on the projection of security rather than military combat power. At the center of this proposal is the necessity to establish a reasonable level of security by using dominant land forces in such a way that all aspects of national power can be applied near-simultaneously; an idea critical not only to current operations, but also for success in military engagements across the continuum of operations in the 21st Century.

This thesis introduces the notion of *persistent security* that originates from dominant land power. Producing forces that can establish a persistently secure environment is the challenge frequently overlooked in the way the American military trains, thinks and approaches warfighting. It does not argue for or against transformation, but rather more clearly reveals the problem facing both the United States nation and its allies – it attempts to reach a basic understanding on how to prepare and operate. Through a more detailed discussion and in-depth analysis, it becomes obvious that the role of the military expands beyond those outlined in strategic documents. That role transcends current strategy and military capability and is accentuated by the likelihood that the U.S. is in the midst of an era of persistent conflict.⁴

This era demands a countervailing concept; a concept which may be captured by the use of dominant land power and the persistent security it yields. Dominant land power is characterized as a force that has the ability to see first, know first, understand

⁴ General George Casey, Chief of Staff of the Army, National Press Club, 14 August 2007. GEN Casey termed the phrase “persistent conflict” often in Army circles but was first publically credited for it during the presentation at the National Press Club.

first and act decisively on the ground to counter threats to security and stability. The force can be of all one service, a combination of services, and have inter-agency expertise as required. The basic premise of the idea is to dominate on the ground where people live, where people have their aspirations, where the preponderance of the people in the entire world live, on the land.

This paper begins by discussing the logic behind a notion of persistent security and how land forces play a critical role in sustaining security. The paper then flows in to a discussion on the constant ebb and flow of firepower versus maneuver warfare to see how modern armies have evolved to meet the threats of their day. This historical vignette is then applied to recent lessons learned on the battlefields in order to garner a vision for how to adjust formations and methodologies for force employment in future wars. It is important to analyze how modern doctrinal principles came to be, whether as a result of the changing environment of warfare, budget constraints, or both. Lastly, the thesis argues for dominant land combat forces capable of instituting secure environments globally, thus allowing stability to flourish in these same environments.

A Global Environment

The current and likely future operating environment presents one with global problems. It requires not just the military, but all of the federal government to think in global terms and realistically consider where and what type of operations forces can be expected to conduct. Established state boundaries have little impact on conflict containment. Al-Qaeda and the ever-growing threats represented by the drug cartels are just two examples of non-state security threats that are trans-national in nature. This environment is characterized as volatile, uncertain, complex, and ambiguous.

Adversaries are using older equipment and capabilities in new ways – IEDs for example – and they are finding niches in newer developments such as a heightened biological threat. They prefer to engage U.S. forces on the ground by irregular means to minimize their technical advantages while seeking weapons of mass destruction as an ultimate strategic counter to U.S. military strength. The essential question becomes, “How does the U.S. military set the conditions to enable success regardless of the environment?”

Globalization and its resultant transparency, and the complexity of the adversaries force the western militaries to change, as does technology, budget and strategic plans and policies. The U.S. and its allies face the constant challenge to adapt their structure, training and employment for forces. Advances in information technologies can confuse as much as assist in a security environment more dominated by the human dimension than by technology. Constant budget challenges and force structure adjustments will have a ripple effect for many years on western formations and doctrine. The military must strive to get ahead of these change catalysts and set the conditions for successful future operations worldwide while continuing to adapt and win the present fight.

The Continuum of Operations & Persistent Security

FM 3-0, *Full Spectrum Operations* offers a sound approach to understanding and meeting these changes. The first step is to understand the 21st Century environment. The continuum of operations discussion in FM 3-0 is comprehensive, and enables a better understanding of the complexities of military operations. The complexity of potential and overlapping missions within the 21st Century security environment is best explained

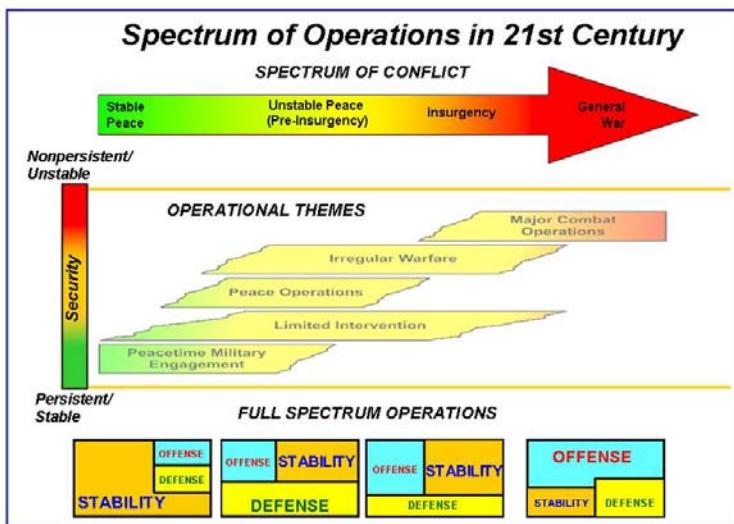


Figure 1, The Spectrum of Conflict

right). The military's operational concept to effectively perform anywhere along this continuum is Full Spectrum Operations (bottom of chart). Full Spectrum Operations is the simultaneous employment of a combination of Offense, Defense, and Stability Operations or (in the case of domestic response) Support to Civil Authorities, and cannot be effectively realized without dominant land power employed as a part of a Joint-Combined Arms Team.

Within the continuum of operations there is a need to define an appropriate level of security that must be achieved for decisive military operations to conclude and within which other elements of national power can be applied either simultaneously (preferred) or sequentially. The goal must be to create synergy amongst the agencies and departments of the U.S. government and their allies. When the U.S. and coalition partners intervene, the security status must become sufficient for a nation's instruments of national power to grow and flourish. The underlying concept suggests that as security

by a discussion on the continuum of operations (Figure 1).⁵ The continuum is composed of two components: the spectrum of conflict (top of chart) and operational themes (center from left to

⁵ U.S. Army Training and Doctrine Command, *Land Power Dominance in the 21st Century, Setting Global Conditions for National Security* (May 2007), by GEN Wm. S. Wallace and LTC E.J. Degen, Briefing Conducted at the Royal United Services Institute Conference in London England (May 2007). This chart and the following charts are the core conceptual slides that outline the thought process in this first chapter.

improves and persists over time, a more stable and enduring peace leading to a self-sustaining secure environment develops.

Equally as important are peacetime military engagements and the recognition that appropriately trained and capable land power has the ability to collaborate with partner nations to help them develop their own capability. This partner capability has great potential to create and sustain a reasonable level of security in the partner nation before situations reach crisis proportions, thus preventing the escalation of security issues to a point which requires outside intervention. In some cases, the U.S. may even enable some of nations to become exporters of security which can provide relief for overworked military and government officials. Thus, with appropriate understanding, global perspective, vision, and resources persistent security starts to develop regardless of where one initiates operations along the continuum of operations.

A common thread, and the first step toward attaining stable peace from anywhere along the spectrum, resides in the ability to provide **persistent security**. Defined as “*An enduring condition facilitated by military forces that allows for the development and application of a nation’s elements of national power in ways that enable a stable and lasting peace.*”⁶

Military operations can begin anywhere along the spectrum without complete situational understanding, and military forces may operate in multiple environments simultaneously. Present global operations attest to this and could be depicted by the oval in Figure 2; somewhere between Insurgency and General War. Therefore, achieving the desired level of security is not a progression left or right along the spectrum of conflict.

⁶ Wallace and Degen, *Land Power Dominance in the 21st Century, Setting Global Conditions for National Security* (May 2007).

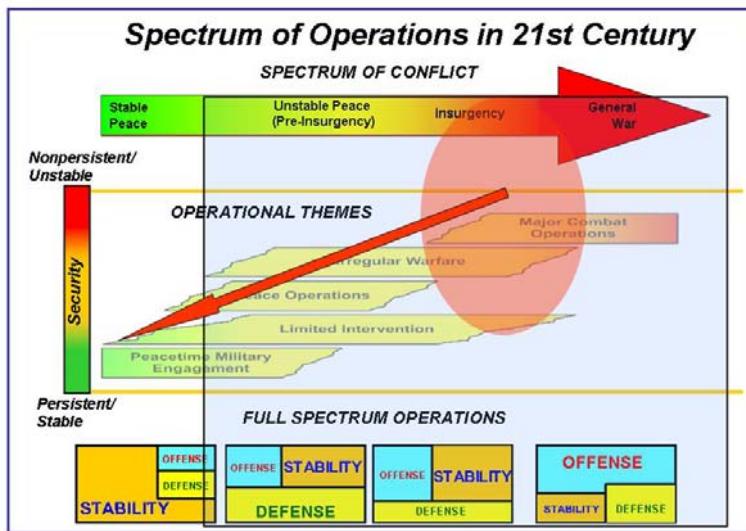


Figure 2, Driving Down the Threat to Increase Security

Progression is measured by driving down the threat (depicted by the narrow arrow starting from upper right and moving to lower left on Figure 2),⁷ thus creating a more secure environment. Under different conditions and

where national security imperatives dictate, immediate action such as air and naval, may be taken to prevent the situation from escalating further to the upper right in the first place. The military forces necessary to establish persistent security to enable stable peace vary based upon where this condition is established along the spectrum of conflict and which operational theme dominates. In the long term every case requires a dominant land force. The land component in most cases will not only establish the initial security environment, it will maintain it. As T.R. Fehrenbach said in his book on the Korean War called *This Kind of War*:

“You may fly over a land forever; you may bomb it, atomize it, pulverize it and wipe it clean of life, but if you desire to defend it, to protect it and keep it for civilization, you must do this on the ground, the way the Roman legions did, by putting your young men into the mud.”⁸

What Fehrenbach wrote fifty years ago is still very applicable today.

⁷ Ibid.

⁸ T.R. Fehrenbach, *This Kind of War* (Dulles, Virginia: Brassey's, 1998).

The U.S. and other western militaries have spent the better part of the 20th Century refining their ability to prepare and employ forces in the high end of the continuum of operations, Major Combat Operations (highlighted by the oval in Figure 2). Today, the military is asked to be efficient and effective across nearly the entire continuum (highlighted by box in Figure 2) while retaining Major Combat Operations capabilities. From Hurricane Katrina to operations in Iraq and Afghanistan and future contingencies, the demands across the continuum pose an entirely different challenge, not in just the employment of forces, but across a large assortment of skill sets. In short, the military is charged with assuming a much larger role in global engagements than anticipated in the past.

To take on this larger role, the joint force needs an enhanced, modernized and capable ground component. While air, space and sea are vital members of the Joint Team, in order to better deal with the present and future enemy in this complex and people-centric environment the military must be prepared to engage in people-centric operations. As Rupert Smith stated in *The Utility of Force*, “modern war is war among the people.”⁹ This is especially true today as the enemy is engaged in complex urban terrain. The open spaces that allowed the “Shock and Awe” of America’s nearly unlimited firepower do not exist on today’s battlefield. The battle space is complex and congested with people, rendering even precision munitions, whether delivered by land, sea or air, of somewhat limited utility.

The assumption that is not holding true today is that the other elements of American national power (diplomatic, informational, and economic) will automatically

⁹ Rupert Smith, *The Utility of Force, The Art of War in the Modern World* (New York: Knopf Publishing Group, January 2007).

assume greater roles thereby enabling the military's gradual disengagement. Arguably, the United States military has of necessity assumed a much greater non-traditional role in current counterinsurgency operations than previous interpretations of the national power model might have suggested—simply because the coalition has not been adequately postured to provide the security necessary to enable the other elements of a new nation's national power to develop. The less stable or less secure the environment, the more preeminent the military's role will probably be. The challenge will be to create and maintain a secure and stable environment sufficient to allow other elements of national power to operate in a reasonably permissive environment without which their effect will be muted, if present at all.

Two Sides to Persistent Security

Persistent security has both a cognitive and physical state. On the cognitive side (Figure 3)¹⁰, the friendly population believes the U.S. can deploy well equipped and

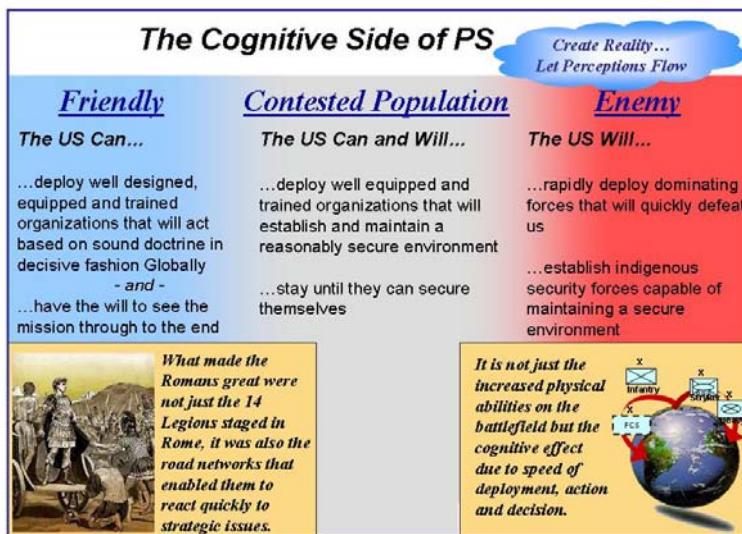


Figure 3, The Cognitive Side of Persistent Security

trained military organizations that will act decisively based on sound doctrine and in a global fashion. They also believe the nation or coalition have the will to see the mission through to fruition.

¹⁰ Wallace and Degen, *Land Power Dominance in the 21st Century, Setting Global Conditions for National Security* (May 2007).

The contested population believes that the intervening force can rapidly deploy and provide a lasting and stable environment. They also realize that even though there is not always a security professional on the street, someone or something is vigilant and is watching to ensure security remains at a tolerable level. There is a common belief that this secure environment allows, and moreover, stimulates economic, educational, social and political activity. There is a compelling understanding on the part of the population that through cooperation with, and assistance of security forces that they will be the beneficiary of such positive developments.

Where persistent security is achieved, the enemy perceives that the U.S. can effectively defeat them rapidly from strategic distances. They will also “know” that they will have minimal sanctuary among the population or in complex terrain. Their ability to adapt is severely countered by U.S., host nation and coalition physical and mental agility. They know that they will be unable to credibly threaten the security of the contested populace and the use of violence is unlikely to affect the level of popular support in a way that better supports their cause. Lastly, they believe that even after the intervening force is gone the indigenous security and police forces will be capable of securing the population and their future.

The physical side of persistent security has an effect locally, regionally and globally and can be applied in a combat (Figure 4) or non-combat (Figure 5)¹¹ scenario. The physical aspect builds from the bottom up. It begins with Soldiers and Marines in small units – land power – as part of a Joint, Interagency, Inter-government, and Multinational (JIIMS) network of enhanced, aggregated capabilities. The term

¹¹ Wallace and Degen, *Land Power Dominance in the 21st Century, Setting Global Conditions for National Security* (May 2007).

aggregated in this case means the massing of the smaller entities in to one synchronized element working towards agreed upon objectives and endstates. These aggregated capabilities with common cause and unified effort are used to create the condition of persistent security at the local or tactical level; one area at a time (clear, hold and build, block-by-block, etc.), and then sustain it. At this level ground forces are also critical in partnering with and building of local and national security forces. In the case of domestic civil support the physical side provides goods, security and a myriad of other services anywhere quickly in times of extreme need.

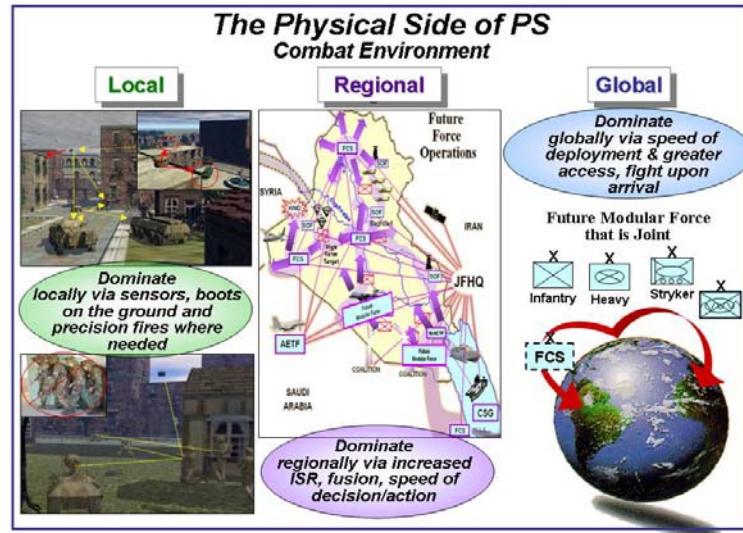
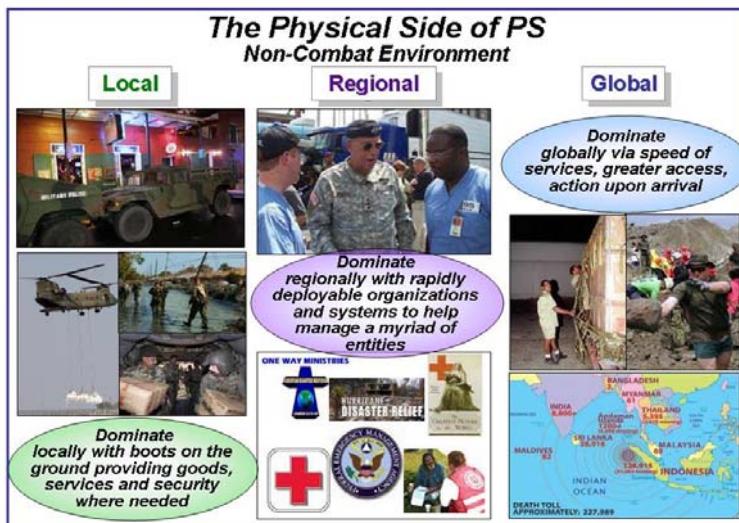


Figure 4, The Physical Side of PS in Combat

etc.), and then sustain it. At this level ground forces are also critical in partnering with and building of local and national security forces. In the case of domestic civil support the physical side provides goods, security and a myriad of other services anywhere quickly in times of extreme need.



From a regional perspective, persistent security fundamentally links the strategic objectives to the tactical tasks by determining, when, where, and for what purpose the tactical

capabilities will be used to build stable conditions. Enhanced capabilities enable U.S.

forces to dominate regionally and operationally with increased intelligence, surveillance and reconnaissance capabilities that allows for speed of decision and action, regardless of circumstance. The force has the ability to stay well ahead of the enemy at the operational level even when a tactical surprise occurs. In a non-combat environment the notion of persistent security enables the rapid deployment and employment of systems and equipment that can help manage and synchronize the efforts of a multitude of organizations in response to crisis.

In a global or strategic sense, the focus is on understanding the problem – that is describing the current conditions, determining future conditions and then providing the resources across the elements of national power to achieve a state of persistent security. In essence, it balances the ends, ways, and means. A future modular joint force with the most modern of systems provides the ability to tailor a specific response, speed the deployment and allows greater access to the contested environment from multiple points of entry. The same can be said for a non-combat environment. Rapid deployment of assets coupled with nearly unlimited points of entry enable quick response in times of disaster, both foreign and domestic even in hard to access areas.

The desired outcome at all levels is a self-sustaining environment with security provided by the host nation or local government through police, paramilitary, military, structured government, and similar means. This environment is reliant on both a government and a legal system that protects the populace from adverse influencers. In this context, the host nation provides a secure environment that allows for freedom and confidence in the nation's elements of national power—however the nation defines such instruments.

Growth in commerce, infrastructure, diplomacy, and law enforcement stimulate international and economic investment. Persistent security does not dictate that the nation in question has to establish a democracy; American-style or otherwise. But, they do have to develop instruments of national power that will flourish in the 21st Century, which means they must be compatible with the world's most influential political and economic systems – democracies and free markets.

The Role of Land Power

The land force as part of the joint force fights and wins the nation's wars and achieves National security objectives as depicted in Figure 6 (below). Land power closes with and destroys opponents



Figure 6, The Role of Land Power

when and where required while protecting U.S. interests. Over the past few years there have been additional and increasingly important missions across the spectrum of operations. Joint forces have been called on to engage with, and transform nations. They have been essential in the integration of all elements of national power. While the joint force achieves remarkable feats, the land force has had a distinct mission depicted on the bottom of Figure 6. These land forces have achieved National security objectives while representing the resolve, commitment, and values of the America people through prolonged worldwide deployments.

Summation of Persistent Security

United States military forces face many challenges in today's Joint Operational Environment. Security is critical in preventing conflict escalation and serves as an enabler to a host nation's elements of national power. Regardless of what operations the military conducts along the continuum of operations, emerging technologies coupled with new ideas about worldwide security will greatly improve America's ability to achieve a self-sustaining, persistently secure environment abroad. While a great discussion point in war college class rooms, military leaders must not overly rely on the other instruments of national power to support military operations, nor assume their presence during early operational phases. Yet, campaign objectives must be designed which focus on the eventual introduction of other elements of national power that are encouraged and enabled by a reasonable level of security.

The cognitive and physical approach to persistent security enables a coordinated effort to secure a population and establish rule of law – both of which are essential conditions for leveraging the elements of national power and neither of which is attainable in the absence of a dominant land force. Persistent security is built from the bottom up and enables the force to establish situational dominance, regardless of the start point, across the entire continuum of operations. These ideas combined with the proper resources to engage in today and tomorrow's Joint Operational Environments will enhance land power's ability to conduct Full Spectrum Operations rapidly and decisively when and where such operations are called for.

It is time to think about new ways to establish and maintain secure environments that allow freedom and growth. Perhaps it is time to not only think about projecting

power, but also exporting security. Without security there is little room for freedom to flourish. In the words of J.S. Nye, “Security is like oxygen—you tend not to notice it until you begin to lose it, but once that occurs there is nothing else that you will think about.”¹²

AirLand Battle doctrine may apply somewhere on future distant battlefields, but for the present fight it is inadequate across the full range of military operations. The notion of persistent security offered by a modernized and dominant land force may be a viable alternative. While it will be impossible for the U.S. and its allies to maintain a persistently secure environment worldwide, this approach at least promises a new way to think about rapidly applying valuable assets where and when needed.

But why is there a need to reassess the conceptual underpinnings of how to think about and engage in war? One simply needs to look at history and the ebb and tide between maneuver versus firepower based warfare to understand why a change is necessary. The 20th Century harbors an evolution of the forms of warfare. For every action of one adversary, there is a reaction by the other, and then a counteraction. Finally, near the end of the century the systems and doctrine possessed by the western militaries force today’s adversary to seek asymmetric means for war. There may no longer be a simple answer involving just firepower or maneuver to counter this threat. As the history will reveal, modern societies constantly struggle to get it right for the next war, but all too often prepare for the last one they fought.

Successful militaries and their governments tend to find the balance between maneuver and firepower. Sometimes this balance is found prior to the escalation of

¹² “East Asian Security: The Case for Deep Engagement” by J.S. Nye, Jr., *Foreign Affairs*, (July/August 1995), 91.

hostilities in to full scale war, but more often it is discovered during times of war. The questions remains, will a balance of firepower and maneuver be successful in irregular warfare and can that balance provide a state of persistent security?

Chapter 2: Firepower versus Maneuver Warfare

Historical Perspective

An analysis of the ebbs and tides of maneuver versus firepower based warfare lends an interesting angle in which to think about the future direction of warfare. As societies and technology evolved over history, so did the kind of war that mankind has engaged in. Constant adaptation is the norm and not the exception. Unfortunately, often the adaptation tends to take place during the next conflict as opposed to prior. Maneuver theory and attrition (firepower) theory are seen as the “the two main theories of war”¹ by the late Richard Simpkin. In a perfect world, the military would find a balance between these two theories that could complement each other in any environment. As the world becomes more complex and military missions more wide-ranging and complex, this balance could be very hard to define.

Up until a few years ago, American military doctrine consistently held that maneuver, speed, and tempo are the keys for success on the future battlefield.² This could have had detrimental effects if military leaders focused solely on the benefits of maneuver warfare and downplayed the advantages of firepower in combat operations. Ignoring the advantages and disadvantages of both theories would severely limit the military’s ability to react to a wide range of contingencies. To establish and maintain a

¹ Richard E. Simpkin, *Race to the Swift: Thoughts on Twenty-First Century Warfare* (London: Brassey’s Defence Publishers, 1985), 18.

² L.D. Holder, “Maneuver in the Deep Battle,” *Military Review*, (May 1982), 54-61. Upon further review of articles circa 1982 to 1992, it obvious that there is a fixation on the maneuver battlefield as opposed to the study of firepower and the advantages gained through efficient and optimal use of it. AirLand Battle Doctrine of this era clearly supports a maneuverist mentality.

secure environment the balance of maneuver and firepower may not seem critical, but as stated earlier, the military must act operate successfully across spectrum of operations.

As an important first step, the key terms used in this work should be clearly understood. Maneuver is defined as:

Maneuver is the employment of forces, through movement combined with fire or fire potential, to achieve a position of advantage with respect to the enemy to accomplish the mission. Maneuver is the means by which commanders concentrate combat power to achieve surprise, shock, momentum, and dominance.³

Maneuver warfare attacks the enemy at a weak point attempting to paralyze the enemy's decision-making process, thus causing the morale and physical collapse of enemy resistance.

One of the best examples of maneuver warfare was the German *Blitzkrieg* of World War II. *Blitzkrieg* was accomplished with the methods of *schwerpunkt* (thrust point) and *aufrollen* (rolling out), that combined to create *flachen und luckentaktik* (tactics of space and gap).⁴ The end effect of these methods was paralysis of the enemy's decision-making system. *Blitzkrieg* did not rely on maneuver alone to accomplish its effect. Firepower was a critical part in the softening of enemy positions at the thrust point, and firepower in the form of aircraft as "flying artillery" was used once the rolling out or penetration outpaced the artillery.⁵ Even in this maneuver dominant form of warfare, firepower still played an important role, albeit much less than a firepower enthusiast would prefer.

³ FM 3.0, Operations, Department of the Army, June 2001, pg 4-2.

⁴ F.O. Miksche. Attack: A Study of Blitzkrieg Tactics (New York: Random House, 1942), xv.

⁵ Ibid., 97-99.

As a result of Desert Shield/Storm, Operation Allied Force in Kosovo, Operation Enduring Freedom, and Operation Iraqi Freedom, America has become increasingly infatuated with firepower, more specifically precision guided munitions (PGMs). The image of smart bombs flying through air ducts is still vivid in American minds. Leaders in both diplomatic and military communities, along with numerous think tanks have inferred that PGMs very well may be the “silver bullet” in future conflicts. Former President George H. W. Bush stated that stealth technology, coupled with precision munitions, is a “revolution in warfare.”⁶ PGMs have and will continue to change the way Americans fight, but should the advances in precision munitions cause the military to reshape the force and the doctrine for the 21st century battlefield? As alluded to in Chapter 1, this is not a revolution, but rather a natural evolution in warfare. As one opponent gains a significant advantage in one form of warfare, the other side develops ways to counter it. Clearly, these munitions possess many positive benefits for America’s armed forces, but hidden in the excitement of these high technology “smart” munitions could be numerous problems that may have detrimental effects in future conflicts.

The rapid advances in the accuracy and effects achieved by firepower are outpacing the advances made in maneuver. The limited speed of maneuver forces and their constant tie to their logistical bases have yet to be overcome. Technological advances are needed in the area of maneuver if it is to close the gap with firepower systems. Clearly the enemies’ of the west have identified the firepower threat and have

⁶ George H. W. Bush, “Remarks at the United States Air Force Academy Commencement Ceremony in Colorado Springs, Colorado, 29 May 1991,” *Weekly Compilation of Presidential Documents* 27, no. 22 (3 Jun 91), 685.

forced the west in to complex terrain and forms of warfare that somewhat neutralizes that advantage.

Firepower is defined as:

Firepower is the amount of fires that a position, unit, or weapons system can deliver. Fires are effects of lethal and nonlethal weapons. Fires include fire support functions used separately from or in combination with maneuver. The extended range, capabilities, and accuracy of modern weapons systems (direct and indirect) and target acquisition systems make fires more lethal than ever before. These capabilities also allow commanders to create effects throughout the area of operations (AO). Commanders integrate and synchronize operational and tactical fires to accomplish their mission.⁷

Firepower, or attrition warfare is much more methodical and systematic than maneuver warfare. It requires extensive synchronization, centralized control, and planning. The firepower theory of warfare minimizes the risk to friendly forces while focusing on the destruction of the enemy's strengths by fires.

A History of Firepower versus Maneuver

To analyze the mix of firepower and maneuver theory required for future operations the history of this balance must be understood. The goal for today's armed forces is not to repeat this history but to glean the important lessons learned from these past experiences. It is difficult to find an example where a major power during the twentieth century accurately forecasted the proper mix of firepower and maneuver prior to a conflict. There are many examples of military powers preparing incorrectly for the next conflict. However, one could argue that AirLand Battle worked well for the purposes of Desert Shield/Desert Storm. The following text analyzes some prime examples of both failure and moderate success.

⁷ FM 3.0, Operations, Department of the Army, June 2001, pg 4-6.

This thesis examines history at the turn of the twentieth century, a period that has many similarities with today. As is now the case, then current technological advances in warfare were changing the way armies fought. The challenge for present day military leaders is to identify how these technologies will affect the battlefield, and apply them for success in the next war.

A very thorough study on firepower and maneuver is entitled *Fire-Power; British Army Weapons and Theories of War, 1904-1945*, by Shelford Bidwell and Dominick Graham. *Fire-Power* is an in-depth analysis of the balance between firepower and maneuver from a mainly British perspective. Bidwell and Graham begin by analyzing the pre-World War I thoughts and theories of the British leadership with an added touch of other European philosophies. They tracked the firepower and maneuver theories through World War I into the inter-war years, and subsequently through World War II.

Prior to World War I

Bidwell and Graham described the mentality of the military leadership prior to World War I as “men whose military outlook had been formed in the nineteenth century and they were faced with the weapon technology of the twentieth.”⁸ The leadership, not only of Britain, but that of other European powers as well, did not recognize some significant developments at the turn of the century. The first were advances in agriculture which allowed countries to produce the quantities of food necessary to feed much larger armies than was previously possible. Another important factor was that modern medicine was better able to ward off disease in these new large armies. Modern

⁸ Shelford Bidwell and Dominick Graham. *Fire-Power: British Army Weapons and Theories of War, 1904-1945* (London: George Allen & Unwin, 1982), 1.

transportation, most significantly railroads, enabled countries to mass large armies in one theater of war more rapidly. The final major misread of the leadership was their inability to understand that the industrial revolution enabled factories to produce massive quantities of weapons and ordnance, which in turn killed large numbers of men in World War I.⁹

Prior to World War I European leaders saw artillery only as an “accessory” to maneuver.¹⁰ Even as military leaders witnessed and wrote about the formidable effects of firepower in the Russo-Japanese War, they ignored these lessons afterwards. The lessons from these wars have parallels dating back to the U.S. Civil War, yet significant changes were not made to their military theory or war machine production. Leaders remained focused on the maneuver aspects of war.

French leadership viewed the impending war with Germany as “...short and of rapid movement...The battle will be primarily the struggle between two infantries, where victory will rest with the battalions...the army must be an army of personnel and not of material. The artillery will only be an accessory arm.”¹¹ This quote is from an artilleryman that only two years before had recommended the adoption of heavy guns into the French corps artillery units after seeing their effect in the Balkans. The French went into World War I with light guns that had limited range capabilities, and had little or no effect on improved defensive positions.

⁹ Ibid., 1.

¹⁰ Ibid., 2. Artillery is also referred to as “an extra wheel for the coach.” What little doctrine there is at this time is almost solely focussed on maneuver.

¹¹ Ibid., 15. Actual quote of General Herr, Commander of Artillery, VI Corps, French Army.

Frenchmen envisioned and wanted a short war. Their 75-mm guns would give them high rates of fire, but their short range required them to be placed in the open. It was a simple but deadly practice. The French tactics were based on rapid concentrations of men and firepower that could seize and maintain the initiative. They intended to rapidly exploit the initiative in the hopes of concluding a quick war with Germany. This of course failed, and the French were caught with the wrong doctrine and weapons for the protracted war they found themselves in. Their weapons would not be much help in the “siege like” warfare of the trenches.¹²

Germany on the other hand did adopt heavy guns and mortars prior to World War I. They also relied heavily on indirect fire techniques to protect the guns from the increased danger of open firing positions, as they witnessed in Manchuria during the Russo-Japanese war. German military leaders also moved the command and control of most guns down to the division level, thus becoming more responsive to the fighting units. They retained centralized control that enabled them to mass their fires. Going into the World War I the Germans had eighteen 105-mm howitzers at division level, twelve 150-mm howitzers in the corps, and 210-mm howitzers in the army reserve. The French opposed them with forty-eight 75-mm guns at the corps level.¹³

German artillery tactics were also better prepared to fight the upcoming war than the French were. Artillery commanders at the division level maintained control of all the artillery as long as possible so that it could be massed at the decisive point. Unlike the French, the Germans did not employ the simple direct fire solution for artillery. They

¹² Ibid., 15.

¹³ Ibid., 17.

applied the science required for indirect fire to enable the artillery to survive the fight, but always kept the option open for artillery to move into the open and help press the attack. The Germans had the confidence that the artillery could neutralize the enemy defenses from their concealed positions.¹⁴

Unlike the French and Germans, the British thought little of firepower techniques prior to the war. Most artillery doctrine was translated directly from the Germans. It was rarely read, and even more rarely understood.¹⁵ One only has to look as far as the British Expeditionary Force's (BEF) composition prior to World War I. There were only twenty-four 5-inch guns supporting seven divisions. By the end of the war the BEF would have 6500 guns and howitzers 3-inch and larger supporting sixty divisions.¹⁶

British artillery tactics were prepared for colonial missions, not continental warfare. While the Germans and French knew who their enemy was, the British had to focus on a wide range of contingencies centered on colonialism. The British army's budget was continually well behind that of the British navy. It was not easy to get the budgeting required to build a strong army that could withstand a protracted war of attrition on the plains of Europe. Therefore, the British hoped for a war of movement on continental Europe that would allow them the time required to build up their firepower systems. To the British military leaders, firepower was something to be built up over time and would culminate in a great battle. Unfortunately, that great battle in the Napoleonic sense would never happen.¹⁷

¹⁴ Ibid., 18.

¹⁵ Ibid., 19

¹⁶ Ibid., 1.

¹⁷ Ibid., 20.

Similar to the Germans, British artillery doctrine placed control of the artillery in the division. However, divisions subsequently allocated the artillery units out to the brigades prior to military engagements. This doctrine made it all but impossible to mass the effects of artillery fires. Quite often the artillery would be held in the reserve until the battle developed. Both of these methods of employment just re-emphasized that artillery was nothing but an accessory arm in the British army.

Artillery leaders within the British Army did not commit to direct or indirect fire procedures. Their doctrine of the time just further confused the situation. Often the doctrine would talk of indirect fire methods, and then revert to the old methods of direct fire. The problem was further exacerbated by the fact that artillery units were not resourced for indirect fire methods, with the battery commander often the only member of the unit capable of computing firing data. He was also expected to be conversant with the infantry plan and control the fires in front of the infantry, but he could not do both. Though there were numerous advances in the art and science of artillery, it is clear that the British were simply paying lip service to these advances prior to World War I.¹⁸

Russian artillery development is well documented in Chris Bellamy's book, *Red God of War, Soviet Artillery and Rocket Forces*. Their artillery tactics were thoroughly developed in the nineteenth century. Their experiences from the Napoleonic wars through the Russo-Japanese War made them believers in the massing of modern artillery pieces to provide decisive results on the battlefield.¹⁹ Russian development of both

¹⁸ Ibid., 20-21.

¹⁹ Chris Bellamy, *Red God of War, Soviet Artillery and Rocket Forces* (London, Brassey's Defence Publishers, 1986), 20.

artillery and rockets around the turn of the twentieth century was technologically ahead of all competitors.

Unfortunately for the Russians, the elevated status of artillerymen caused the artillery to evolve into an elitist branch of service. Officers selected for the Field Artillery were promoted ahead of infantry and cavalry officers, resulting in these other branch officers resenting them. The artillerymen were so wrapped up into the science of their branch that their alienation went virtually unnoticed. A direct result was that cooperation between the branches of service would become almost impossible at the start of any future conflict. Referring to the Chief of Russian Artillery and his aide, a British observer noted at the beginning of World War I “both of them represent the views of the high bound gunner who is so obsessed with science that he never thinks of the necessity for practical cooperation with the infantry.”²⁰

The Russo-Japanese War clearly proved to Russian military leaders that the lack of cooperation between the branches of service was a major deficiency. Entire battles occurred where numerous artillery units did not get into the fight. Artillery was not involved with, nor did they often times understand the maneuver plan, making it virtually impossible to mass the artillery at the decisive point.²¹

World War I

With the flawed doctrine that the European powers took into World War I, it is easy to understand why they all initially failed. All armies fighting in the early part of the war thought the war would be a fight between battalions and brigades using quick

²⁰ Ibid., 34.

²¹ Ibid., 36.

maneuver to force the enemy on favorable ground, where they would engage in the decisive battle. Once locked into that decisive battle, firepower would annihilate the enemy. Unfortunately for most combatants they either had the wrong firepower systems, wrong doctrine, or both.

Leaders simply did not understand the impact that firepower would have in this war. Even during the early stages of the war Sir Douglas Haig thought of firepower as limited in its capabilities, believing that too much reliance on firepower would cause a loss of morale, surprise and initiative.²² Powerful leaders amongst all the combatants shared Haig's narrow-minded thoughts on warfare. Unfortunately for the fighting men and junior leaders, that meant crossing the open battlefield only to be decimated by entrenched enemy rifles, machine guns, and artillery.

Leadership continued to seek a war of maneuver, trying to find the exposed flank or the weak front. It is as if senior military leaders would not heed lessons learned dating back to the American Civil War. Haig specifically did not understand that he was in a siege war, one dominated by artillery and engineers. This mentality was common throughout the combatant commanders. Fortunately for the Allies, the artillerymen were working around the guidance of the General Staffs and devising effective ways of massing on the enemy's forces at the decisive points.

The battle of Cambrai in November of 1917 showed the shock value that a mobile combined arms team could accomplish if properly employed. The firepower of tanks, coupled with large quantities of artillery using up-to-date methods, overwhelmed the German lines. Unfortunately, the Allied forces could not support the depth required to

²² Bidwell & Graham, 57.

exploit the large penetration, but this event was a successful beginning for true combined arms efforts. Many historians consider Cambrai to be the first modern battle, and it was definitely the turning point for the Allies and their tactics.²³

War on the Eastern Front of World War I painted a different picture than the Western Front. Like the French and British, the Russians ran short of artillery ammunition for numerous reasons, though the main reason was that they did not foresee a large firepower battle but a war of maneuver. Unlike Russian strategy during the war, their tactics were sound. Their indirect fire techniques were very good and they were able to mass enormous numbers of artillery tubes at the decisive points.²⁴

Unlike the British at Cambrai, the Russians understood the depth required in exploiting a breakthrough. In Brusilov's offensive in the summer of 1916, the Russians succeeded in breaking through the enemy lines when he finally had achieved cooperation between the infantry and artillery. The Russians built elaborate fire plans based on their capabilities rather than the effects they wanted. In basic terms, they figured out what they could do with the amount of tubes and ammunition they possessed, or "adjusting ends to means."²⁵ The Russians kept the exploitation force in bunkers close to the point chosen for the penetration. This force had light guns positioned with them to provide fire support throughout the depth of the exploitation. Once the hole in the enemy's defense was opened with massive artillery fire, the exploitation force poured through to route the enemy. This concept is prevalent in the later Soviet doctrine of *Deep Operation*.²⁶

²³ Ibid., 71.

²⁴ Bellamy, 36.

²⁵ Ibid., 38.

²⁶ Ibid., 39.

Clearly the Russians had learned some important lessons in their earlier war with Japan that enabled them to better understand the requirements for future war. In his book *The Conduct of War*, J.F.C. Fuller states that the outstanding tactical lessons of the war (Russo-Japanese) were:

- (1) The failure of frontal attacks and the success of envelopments
- (2) The enormous defensive power of field entrenchments and wire entanglements
- (3) The increasing deadliness of the machine gun
- (4) And most marked of all, the power of quick-firing artillery²⁷

All the major powers that fought World War I had observers in the Russo-Japanese war. One has to question why they did not learn from the Russian and Japanese experiences since the observers clearly documented these trends in their reports.

British officers attached to the Japanese army recognized the effects of firepower on modern war and forwarded these findings to their leadership. Colonel W.H.H. Waters wrote, “By the light of my own experiences I can see no reason why artillery should not often be the decisive factor, and it certainly was at Tellissu.”²⁸ Major J.M. Home, also attached to the Japanese army, writes:

The greatest impression made on me by all I saw is that artillery is now the decisive arm and that all other arms are auxiliary to it. The importance of artillery cannot be too strongly insisted upon, for other things being equal, the side which has the best artillery will always win...So strongly am I convinced of the immense importance of artillery that it seems almost a question for deliberate consideration whether artillery should not be largely increased even at the expense of other arms.²⁹

²⁷ J.F.C. Fuller, *The Conduct of War, 1789-1961* (New York, Da Capo Press, 1961), 142.

²⁸ Ibid.

²⁹ Ibid., 143.

The strength of this last quote shows the impression made on the minds of those trained observers who witnessed the effects of artillery on the battlefield. It is amazing that these lessons seemingly were ignored prior to World War I.

Fuller gives a good account of his impressions of what caused the stalemate in World War I, and how the leadership of both sides attempted to overcome it. Fuller states that upon the obvious recognition of the stalemate caused by trench warfare, leaders then tried to figure out how to break the stalemate by somehow reinstating mobility.³⁰ They recognized that they did not have the guns or the ammunition to blow a hole through the enemy's lines, nor did they understand the tactics of penetration. They also did not understand the power of quick firing artillery, as well as failing to foresee that ammunition supplies were based on their industrial production capabilities which had gone virtually undeveloped during peacetime. These failures ended with the immense loss of human lives at the foot of entrenched defensive positions.³¹

The Allies then fell upon what Fuller calls the “escapist strategy.”³² This was a strategy of trying to open new fronts from which to attack Germany and her allies. These attempts would give the Allies the ability to maneuver freely without encountering the formidable trenches. Unfortunately, all of these attempts ended in dismal failure, most notable being Churchill’s blunder at Gallipoli.³³

Fuller sees a struggle to regain the ability to maneuver over the strength of firepower, though he does not see this happening until the introduction of the tank.

³⁰ Ibid., 160.

³¹ Ibid., 160-161.

³² Ibid., 164.

³³ Ibid., 162-164.

Though Fuller has a maneuver centric perspective in his writing, he confirms the failure of leadership in his time to understand the implications of new technologies and procedures on the modern battlefield. Cause and effect are rarely understood.³⁴ Fuller's summarization of this period has striking similarities with the world today.

The Inter-War Years

In most armies the inter-war years were typical of the pre-World War I period of stagnation of military thought and development. The British immediately set forth to stand down the artillery. Thoughts were focused on a lasting peace in Europe, therefore the expense of maintaining large stores of artillery were impractical due to budget constraints. What cannot be understood is how the lessons of the World War I could be so soon forgotten.³⁵ By using these lessons to develop a coherent doctrine, the British could have remained aware of what future war might be like.

The British in particular did not have a coherent policy to guide military development in this period. In 1926 the Chief of the Imperial General Staff (CIGS), Field Marshal Sir George F. Milne, himself an artilleryman, was a man who contributed much to this stagnation. In 1933, towards the end of his reign as CIGS, he made a comment at a conference of general officers that typifies the stagnant thought of the era. This comment was made in regards to a debate on combined arms tactics with mechanized forces. Milne said:

...there will always be a future for horsed cavalry... artillery was on the right lines (it was almost all dependant on horse traction)... and that in any case he hoped there would never be major intervention by Britain in

³⁴ Ibid., 175.

³⁵ Bidwell & Graham, 149.

a continental war, and that the correct task of the army was imperial defence.”³⁶

It is fairly evident that British leadership was once again out of touch with the evolving practices of warfare, and quite possibly world events. What is more amazing is that many of the senior leaders in the British army during the inter-war years were artillerymen.³⁷

Bidwell and Graham sum up the inter-war years as a period of not only stagnation in thought, but also a nostalgic attempt to return to the life that officers had enjoyed prior to World War I. Many of the bright young artillerymen transferred to the tank corps because they saw it as the future dominant arm in war. Artillery doctrine and technology stagnated during the period by embracing old theories and equipment. Once the artillery set out on the road to modernization just prior to World War II, they failed to get it right and thus cost the lives of many soldiers on the future battlefield.³⁸

The Soviets during this period enjoyed an abundance of innovative thinking up until the great purges of the middle 1930’s. They continued to think of artillery as a major combat multiplier requiring close integration with maneuver. Long range systems were developed that could savagely affect the enemy at greater depths. The Soviets truly believed that firepower enhanced their ability to maneuver while limiting the enemy’s. They saw artillery as a means to not only clear a path for infantry, but for tanks as well.

³⁶ Ibid., 150. Original comments from the PRO, Kirke Committee Report, WO/32/3116.

³⁷ Ibid., 154.

³⁸ Ibid., 166.

Artillery would also be used to conduct deep counter-battery fires and to isolate enemy forces on the battlefield.³⁹

Leadership at the highest levels in the Soviet army did not believe artillery was past its prime in warfare. Stalin himself was a great believer in the ability of the artillery. Prior to the start of World War II the Soviets had 9200 field and heavy guns, about twice the number of the Germans and three times the number the French had. By June of 1941 the Soviets would have 67,000 guns, howitzers and heavy mortars.⁴⁰

Germany on the other hand decentralized the control of the artillery during the inter-war years because they felt that the aircraft could assume many of the ground artillery roles in the next war. This decentralization caused an inability to mass artillery, thus relegating artillery to engaging targets of opportunity in the next war. Many felt the artillery was out of date with the advent of air power, as it could not maintain the speed required to keep up with the armored spearheads of the *Blitzkrieg* tactics. This practice would not bode well once the Germans lost their ability to control the skies over Europe. The lack of firepower in the form of aerial artillery support made their armored thrust untenable and the dispersed artillery was not conducive to massing on lucrative targets. Massive artillery barrages like those of World War I would become “merely interesting phenomena of the past.”⁴¹

³⁹ Bellamy, 45.

⁴⁰ Ibid., 48

⁴¹ Bellamy, 47.

World War II

Two quotes summarize the leadership views of World War II. Winston Churchill was quoted in 1942 with saying “Renown awaits the commander who restores artillery to pre-eminence on the battlefield,” and Stalin said simply, “Artillery is the God of War.”⁴² Stalin and his army had their focus on artillery prior to the war, but the British had little if any of this focus. It did not take Churchill long to recognize the urgent need for artillery firepower.

As discussed previously, the Germans put more of the firepower yoke on the back of aircraft to support their *Blitzkrieg* tactics. This theory was highly effective originally, but later waned in the defense. Initially the German tactics of *Blitzkrieg* successfully paralyzed the enemy command on both the western and eastern fronts. *Blitzkrieg* relied on aircraft as a form of artillery to support the deep encirclement of enemy forces. Once the western front was conquered and the eastern front stabilized the defense settled in, finding the Germans woefully short of artillery firepower due to the attrition of their aircraft, and probably more so pilots.⁴³ Allied air superiority had virtually neutralized German firepower in the air, and they did not have the tubes to match the Allies on the ground.

The British meanwhile did not have time to learn much while on the continent because of their rapid expulsion back across the English Channel, but it became clear that they had a severe shortage of firepower of any kind. However, they did learn many lessons in the deserts of North Africa. British commanders originally tried to fight the war with their forces widely dispersed. This doctrine failed badly. Not only did they set

⁴² Bidwell & Graham, 203.

⁴³ Ibid., 213.

themselves up for piecemeal destruction, but they fragmented and decentralized their artillery. They had essentially made their artillery and maneuver forces non-factors in the battle. This changed when General Montgomery took command in North Africa. The old methods of dispersion went away, as did the fragmented and disjointed methods of attack.⁴⁴

General Montgomery was not only the first of the British commanders to identify the critical need for firepower, but he also devised the proper tactics to mass it. Montgomery used massed firepower to decimate his enemy prior to attacking with maneuver forces. He felt that this reduced friendly casualties by minimizing the enemy's ability to inflict them.⁴⁵ Many military historians believe that Montgomery's reliance on firepower was too extreme, and that he was overly cautious because of a desire to avoid casualties. Whether the above statement is true or not, Montgomery was successful in North Africa and moderately successful on the European continent later in the war.

Battles fought in North Africa restored artillery as the dominant system on the battlefield in World War II. At Hunt's Gap in Tunisia in March of 1943, seventy-two 25-pounder howitzers and sixteen 5.5 inch howitzers decimated the German 10th Panzer Division during their attack. This effect of massed artillery had a profound impact on the infantry and armor soldiers who witnessed it from a safe distance and those that incurred its wrath.⁴⁶

⁴⁴ Ibid., 225.

⁴⁵ Ibid., 245.

⁴⁶ Ibid., 259.

Soviet experiences in World War II were quite different than the British. Because of German tactics, German forces were swallowing up large, slow Soviet artillery systems. Subsequently, the Soviets had to pull their heavy systems back to more secure areas.⁴⁷ As the front began to stabilize, Soviet artillery began to enjoy a tremendous advantage over German systems. Their centralized command structure and sheer quantities enabled them to mass their fires on the German forces with very good results.⁴⁸ Although the Soviet tactics emphasized artillery, their efforts were truly combined.⁴⁹ The Soviets were simply exploiting the effects of their firepower with maneuver, rather than vice versa.

A study of this period lends insight to some of the issues facing the military today. During this time, as is true today, technology was advancing rapidly. Unfortunately, the intellectual process was not moving at the same rate of speed. Even with numerous examples showing that the defense and attrition were the way to go, military leaders continually attempted to prepare and fight a war of maneuver. Planning for a maneuver fight may have been successful had the planners recognized that they would be attempting this maneuver in an attrition warfare environment. The planners did not recognize this and the consequences were horrifying upon the commencement of hostilities.

⁴⁷ Bellamy, 49.

⁴⁸ Ibid., 50.

⁴⁹ Ibid., 58.

Post World War II

Military leaders learned and retained their lessons from World War II. Once the United States achieved an adequate military build-up, they relied on massive firepower in the Korean Conflict with positive results. In the process they were able to stave off the immense Chinese army. Unfortunately for the United States military, they used the same tactics in Vietnam against a totally different enemy. History proved those tactics based on firepower did not work in this different kind of war.

Unable to invade North Vietnam because of political reasons, the military relied on a war of attrition to defeat an asymmetrical threat. They were forced into this option because of the need for a quick victory and to avoid casualties. Regular counterinsurgency methods would be long and laborious, and severely test the will of the American people to prosecute the war.⁵⁰ This is the complete opposite of the examples studied earlier. There seemed to be an extreme reliance on firepower to minimize friendly casualties. As General Depuy noted, “if you wanted to analyze what happened in Vietnam you’d say the infantry found the enemy and the artillery and air killed the enemy.”⁵¹

Unfortunately for the United States, the enemy in Vietnam figured out how to counter these tactics. One Viet Cong general was quoted as saying, “The way to fight the American was grab him by his belt, to get so close that his artillery and air power was useless.”⁵² The enemy had simply done what the Germans often did in World War II,

⁵⁰ Andrew F. Krepinevich, JR., *The Army and Vietnam* (Baltimore, Johns Hopkins University Press, 1986), 164.

⁵¹ Ibid., 197.

⁵² James R. Arnold, *Tet Offensive, 1968, Turning Point in Vietnam* (London, Osprey, 1990), 30.

“hugging” the enemy to offset his firepower advantage. As discussed earlier in this paper, this is strikingly similar to the situation the U.S. finds itself in today. Enemies will find ways to adapt out of their instinct to survive.

Operation Desert Shield/Storm saw a continued reliance on firepower by the United States and its coalition partners. Fortunately, the enemy did everything they could to accommodate the coalition’s efforts. Although the display of firepower did not force Iraq to withdraw from Kuwait, it did render the enemy dysfunctional prior to the coalition attack. The mission still required ground forces to maneuver through and occupy terrain to achieve the endstate.

Operations in Kosovo offered more of the same, an enemy who catered to western military strengths in the area of firepower. The North Atlantic Treaty Organization (NATO) forces used firepower in the form of air and cruise missile attacks against Serbian forces in the Federal Republic of Yugoslavia (at this time consisting of Serbia, Montenegro and Kosovo). The strategy was successful in removing Yugoslavian forces from Kosovo although the air campaign took more than seventy days, as opposed to the seven or less originally planned. In the words of the U.S. National Security Advisor, Samuel Berger, “there is no intent to follow up air and missile attacks with ground combat power.” Therefore, the United States and NATO were to rely on only firepower to achieve the strategic endstate. Unfortunately Berger was wrong, as NATO ground forces continue to occupy and pacify Kosovo nearly ten years later.

Many of the same trends can be found in Operations Enduring Freedom and Iraqi Freedom, minus what happened after the major combat operations ended. While firepower again led to quick and decisive victories in both, the enemy quickly adjusted

and pulled the western militaries back towards an insurgency war. This tactic has rendered the firepower advantage almost useless. Historians would be challenged to find many examples of modern warfare where firepower or maneuver alone achieved the strategic endstate. A balance is needed that allows the joint force to quickly adapt to missions across the full range of military operations.

Conclusion of Historical Analysis

After a thorough study of firepower, or attrition warfare, versus maneuver warfare, there is still there the question of where the U.S. and its allies should direct their force development energy. For generations, competitors and enemies alike have constantly adjusted their style of warfare to offset any advantage gained by their

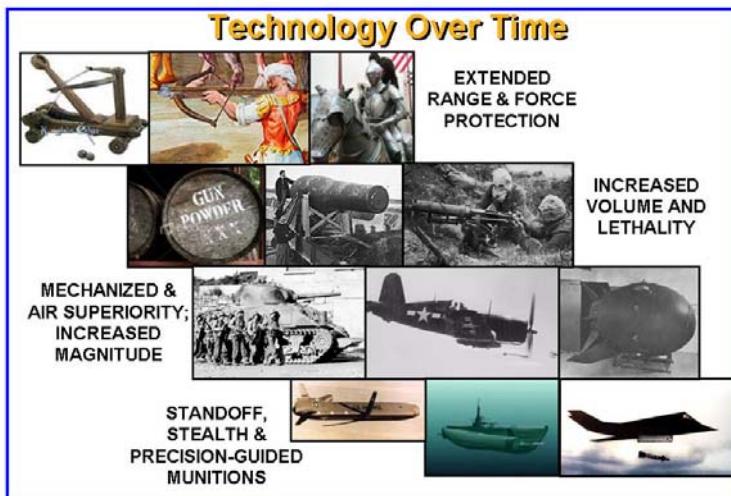


Figure 7, Technological Impact on Warfare

adversaries. The picture at left (figure 7) encapsulates the impact of technology over time and its effect on warfare. As Agincourt will attest, the extended range of the long bow was an overwhelming advantage

over the enemy. This advantage was soon countered or matched, so the emphasis was on increasing the volume of fire and the lethality of that fire. Again, the enemy quickly adapts to counter this advantage. The “mechanized firing position” in the form of the tank, along with the airplane and the atom bomb followed, and they increased the

magnitude of the “firepower effect” exponentially. Peers and rivals countered with technology of their own.

As seen in the figure below (figure 8), the same can be said of the evolution of warfare as it pertains to maneuver, or the application of maneuver and mass to overcome and defeat the enemy. The Greek phalanx



Figure 8, Application of Maneuver and Mass

and the Roman legions were uniquely concentrated maneuver forces formed to mass at the decisive point against the enemy. Gradually this tactic was countered by other means. Maneuver then focused on formations that allowed them to speed the attack to the enemy’s weaknesses. Again, the tactic was countered and a tactic of concentration and quantity evolved which saw the true evolution of multiple arms or methods of attack. Finally, as shall be seen in the next chapter, maneuver evolved into a synchronized combined arms effort that is typified by AirLand Battle doctrine.

These constant changes in the nature of warfare are required to counter enemy adaptations, technological improvements, societal evolutions, and much more. As will be shown, AirLand Battle is a continuum of the same changes. AirLand Battle may simply be a doctrinal compromise to offset a massive traditional threat posed by the Soviets with a smaller more efficient and effective force, but the similarity to today are striking. Western militaries are being asked to establish secure environments across the globe. As

discussed in Chapter 1, the adversaries are transnational groups not bound by traditional Westphalian nation state boundaries. The environment today poses a complex problem, just as the one AirLand Battle solved. There is much to gain by understanding how the success of AirLand Battle helped with the Cold War. Those same lessons could be applied to establish a situation of persistent conflict.

Chapter 3: Evolving Doctrine and the Future of Warfare

Evolving Doctrine for Land Power

With Vietnam behind the U.S. military, the focus quickly became the U.S.S.R. as the main adversary of the Cold War. Although symmetric in the nature of their forces, the size of the Soviet military versus those of the west was daunting. It would take a new way of war to counter this threat without the risk of escalation to weapons of mass destruction. To counter this threat it took leaders and intellectuals with a vision for the future of warfare. Many people have tried to envision what the future threat will look like, what organization and equipment the armed forces will have, and the size of these forces. The historian Michael Howard stated that the military has a difficult time properly preparing for war in peacetime. The previous chapter depicted numerous failures. The period discussed in this chapter offers to shed a glimmer of light on how to possibly posture the force for success in the next war. This effort also is designed to possibly disprove Michael Howard's thesis using the case of AirLand Battle to counter the Soviet threat.

This chapter examines the initial concepts that drove and gave direction to the transformation of the ground forces America used from the close of the Cold War through Operation Iraqi Freedom One. The genesis of this drive for transformation was Force XXI and the Army After Next (AAN), both originating in the mid 1990's. Both concepts emanate from General (Retired) Gordon R. Sullivan's vision of the future battlefield and what he felt the Army must do to meet those challenges as stated in *Decisive Victory, America's Power Projection Army, and Land Warfare in the 21st*

*Century.*¹ Understanding the rationale that drove Force XXI and AAN are critical to analyzing the potential solutions to fulfilling the military requirements of the next century. While all the military services strived to improve their doctrine for the future employment of their arm, the following discussion focuses mainly on U.S. Army initiatives for future land combat operations.

Building blocks of Force XXI and Army After Next (AAN) came from a White Paper published in October of 1994 entitled *Decisive Victory, America's Power Projection Army* and TRADOC Pamphlet 525-5, *Force XXI Operations*.² The then Chief of Staff of the United States Army, General (Retired) Gordon R. Sullivan and the then Secretary of the Army, Togo D. West, Jr., signed the former. This document called for change in the Army to meet the challenges of tomorrow.

The Army of the Cold War succeeded, but that Army is not what was needed for the next generation. Today's Army has become a power projection force (force projected from the continental United States rather than forward deployed overseas) that must be more agile than its predecessor of the Cold War.³ These concepts were further developed under the present Bush administration with the former Secretary of Defense, Donald Rumsfeld leading the charge.

With the fall of the Berlin Wall and the collapse of the Soviet Union, the strategic landscape of the world changed dramatically. Major combat operations became less

¹ Gordon R. Sullivan, and Togo D. West, Jr., *Decisive Victory, America's Power Projection Army, A White Paper*, (Washington, D.C.: GPO, October 1994), 2-4. Also Gordon R. Sullivan, and James M. Dubik, *Land Warfare in the 21st Century*, (Strategic Studies Institute, Carlisle Barracks, Pennsylvania: February 1993),v.

² Ibid., 1.

³ Ibid.

likely, while irregular warfare and peace operations became more the norm. While stability missions are becoming more common, the joint force must remember that its main focus is still to fight and win the nation's wars.⁴ That requires mastery across the Full Spectrum of Operations; Offense, Defense, and Stability. Threats to national security may have changed, but the Army's role will essentially remain the same. The people of the United States depend on the Army to conduct prompt and sustained land warfare and win. While the Army will remain an integral part of the joint team, the Army must retain the unique ability to dominate on land and impose the will of the United States on the enemy. General Sullivan and Secretary West understood that the Army must change to be a viable entity in the 21st Century, but they also did not want to lose focus on what the Army has done for over 200 years and must possibly do in the future, win conventional wars.⁵

Decisive Victory, America's Power Projection Army continued by discussing what the Army needs to do in the future to be strong and successful. A key point of the paper is "... the essential characteristics of the Army must be readiness, deployability, versatility, and sufficiency."⁶

Because the Army is now primarily a force projection entity, the ease of deploying each combat system becomes critical. On the other end of the deployment, that system must then be able to do the mission required of it. The United States cannot afford to trade combat power capabilities for increased deployability. New combat

⁴ Ibid.

⁵ Ibid.

⁶ Ibid. 12. The discussion focuses on what characteristics the Army must possess to succeed in the future.

systems must not only be lighter, but must also have equal or greater capabilities than the systems they are replacing. Essentially, the Army is looking for “more bang for the pound.” PGMs play a very important part in this concept, as they can do much more on the battlefield with much less deployable weight. The capabilities of the future Army as discussed in the White Paper are: dominant maneuver, the ability to conduct precision strikes, winning the information war, protection of the force, and the ability to project and sustain combat power.⁷ These five capabilities are constantly competing against each other for limited resources. It will always challenge the Army to try to maximize the effects of all five future capabilities.

Decisive Victory, America’s Power Projection Army offers a general background of the thoughts and ideas that drove much of the Force XXI and Army After Next initiatives. The White Paper gathered these thoughts, melded them, and gave one cohesive direction for the next twenty-five years, through the year 2010. To further develop the picture of the future it is necessary to discuss what land warfare will possibly look like in the 21st Century.

General (Retired) Sullivan, along with Lieutenant Colonel James M. Dubik, wrote a short pamphlet on their vision of future warfare. This pamphlet is entitled *Land Warfare in the 21st Century*. The document cites three changes in the international landscape that will have the greatest impact on the Army in the future. These changes are:

First, the international system is undergoing its major transition of the 20th century in response to the end of the cold war. Second, changes in military technology are culminating in what many believe will be a military-technical revolution that brings unprecedented depth and

⁷ Ibid., 18.

transparency to the battlefield. Finally, this paper cautions that change will inevitably coexist with at least three constants-- the root causes of war, the nature of war, and the essence of fighting power.⁸

The first and last changes were discussed in depth in the first portion of this section. Further discussion is required on the second change, as it relates directly to new systems being developed for the Army of the future. According to Sullivan and Dubik the five most important technological developments of this “military-technical revolution” are: “lethality and dispersion, volume and precision of fire, integrative technology, mass and effects, and invisibility and detectability.”⁹

Firepower in the form of precision guidance munitions (PGMs) has an immediate impact on many of these developments, but overreliance on them could lead to dismal failures if the enemy continues to counter their effectiveness. Sullivan and Dubik believed that these technologies would allow a smaller force to achieve the desired effects if they are used properly by well qualified soldiers, but they also acknowledge that there is a line below which technology cannot compensate for extreme cuts in the force structure.¹⁰ This reinforces the point that while PGMs are extremely effective on point targets with actionable intelligence, the war the U.S. finds itself in now does not offer many of these opportunities.

Sullivan and Dubik envisioned the Army being used much the way that the Army has been used since Desert Storm. Political leaders will continue to couple the military with other elements of national power to promote stability abroad. As has been seen over

⁸ Gordon R. Sullivan, and James M. Dubik, *Land Warfare in the 21st Century*, (Strategic Studies Institute, Carlisle Barracks, Pennsylvania: February 1993), iii.

⁹ Ibid.

¹⁰ Ibid.

the past years since Desert Storm, all major military deployments have been to either establish secure environments or support preexisting stability operations. All of these missions were very slow to integrate the other elements of National Power to help solve the security and stability problems.

Advances in firepower and other new technologies may not have an apparent impact on these types of operations, but there is always the possibility that these situations could escalate into conventional war. Sullivan points out that the Army would be prudent to remember that the “decisive use of military force does not necessarily entail total war.”¹¹ In a case of escalation the Army must still be able to employ military force in an overwhelming fashion.

Operations across the spectrum of conflict will be encountered in the future, and the joint force must be prepared to confront them in a rapid and decisive manner.¹² This is a daunting task for planners of future military operations. With present and future constraints in lift assets, planners must get as much combat power in the smallest possible deployment packages. Firepower, via PGMs, could ease this burden because of the relatively large amount of firepower they get in a small logistical package.

The goal is to use as much precision as possible to rapidly complete the mission with minimal costs of lives and resources.¹³ Again the American aversion to casualties is revealed in *Land Warfare in the 21st Century*. This aversion to casualties is prevalent in

¹¹ Ibid., 7.

¹² Ibid., 7.

¹³ Ibid., 6-7.

most of the documents used in this thesis. All of these themes have an impact on how the future force is developed.

Deciding the force and weapons structure for the future Army is a monumental task. Politicians are requiring the military to get smaller in “size and budget, contribute to the domestic recovery, participate in global stability operations, and retain its capability to produce decisive victory in whatever circumstances they are employed.”¹⁴ All of these requirements are happening concurrently. If it were not for the present budget supplemental funding for the War on Terror, the military would be very hard pressed to fulfill all the force development requirements needed for the next war.

General (Retired) Sullivan stated that the Army must do four tasks well to succeed in the future world of conflict: first, the Army must balance these requirements with technology to offset the loss in manpower, and then take advantage of its ability to maneuver and dictate the tempo of an operation in conjunction with firepower. Thirdly, the Army must maximize its effectiveness in joint operations, and finally, the Army must maintain flexibility and balance in force structure and capabilities. As discussed in Chapter 1, this sounds like the Army needs to do it all, and do it well. The Army cannot afford a misread of the next war as stated by Michael Howard.

Sullivan and Dubik stated that the strategists should essentially try to keep the best of today, take it forward into the future, and adapt rapidly to the revolutionary changes of tomorrow.¹⁵ Martin van Creveld recognizes this fascination with technology and war in the following quote:

¹⁴ Ibid., 8.

¹⁵ Ibid., iv.

When the chips are down, there is no ‘rational’ calculation in the world capable of causing the individual to lay down his life. On both the individual and collective levels, war is therefore primarily an affair of the heart. It is dominated by such irrational factors as resolution and courage, honor, duty and loyalty and sacrifice of self. When everything is said and done, none of these have anything to do with technology, whether primitive or sophisticated.¹⁶

It is important to remember that all the technology known to man at this point of time will not induce a hollow and untrained Army to fight and win on the modern battlefield. George and Meredith Friedman in their book *The Future of War* makes the point that, “A successful military is one that can constantly overthrow old weapons and doctrine and integrate new ideas and personnel without social upheaval. All successful military forces have been able to do this for a while, none permanently.”¹⁷

Future Theory and Doctrine

Present Army doctrine in the form of AirLand Battle is focused on the maneuver battle to gain a positional advantage over the enemy, thus forcing him to capitulate. Firepower’s role is to help facilitate this freedom of maneuver. Present doctrine focusing on these concepts is out of date, and is presently being revamped to coincide with future theories and technologies. Even with this maneuver focused doctrine the U.S. military historically has thrown their doctrine by the wayside and fights a battle based on firepower and destruction.¹⁸

¹⁶ Martin van Creveld, *Technology and War*, (New York, The Free Press, 1989), 314.

¹⁷ George and Meredith Friedman, *The Future of War*, (New York, St. Martin’s Griffin, 1998), 25.

¹⁸ Christopher Bellamy, *The Evolution of Modern Land Warfare: Theory and Practice* (London and New York: Routledge, 1990.), 16.

The U.S. Army trains against models that must be destroyed to gain victory. Whether a commander is fighting a computer-simulated enemy or the opposing forces at the National Training Center, he is ingrained with the concept that he must destroy the enemy to gain victory. Maneuvering to gain a positional advantage, thus causing the capitulation of the enemy rarely will work in these environments. Destruction is easily quantifiable with numbers, while defeat is subjective and nebulous at best.¹⁹ This may be part of the frustration in irregular warfare, where it is very difficult to quantify success.

The Army's fight for relevancy is based on its transformation from an industrial-based Army, to an information-based Army. General Sullivan stated that the baseline for this new force is dominate maneuver, project and sustain the force, win the information war, conduct precision strikes, and protect the force.²⁰ Rapid technological advances in the areas of information and precision strikes, coupled with the capabilities required for the future force, have reinforced the increased role of firepower on the future battlefield. Unfortunately the enemy gets a vote and will use that vote to continue to negate the U.S. military's firepower advantage.

Evolving doctrine has a new emphasis on the relevance of firepower. Technological advances in firepower are rapidly outpacing the advances in maneuver. While intelligent and brilliant precision systems are evolving to new levels of capabilities for the future battlefield, maneuver remains constrained by the limits of the internal combustion engine and its logistical requirements. The tank and armored fighting vehicles susceptibility to attacks by these precision systems is also rapidly becoming a

¹⁹ David E. Funk, *Tactical Dislocation: Force XXI Doctrine or Just Another Pretty Theory* (SAMS Monograph: Ft. Leavenworth, KS, 1997-1998.), 15.

²⁰ Sullivan and Dubik, iii.

limiting factor. Although the meaning of maneuver for the joint force goes well beyond just the definition of ground maneuver as stated earlier, the fact still remains that if you want to control the populace you must put forces on the ground where they live.

The emphasis on firepower does not originate only from General Sullivan's work. This emphasis also appears in *TRADOC's 20th Anniversary Seminar on Future Warfare* in 1993. Three constant themes reoccur throughout the seminar: quick, decisive, and few casualties.²¹ These themes are seen again in the Army's concept document for *Force XXI Operations*, *TRADOC PAM 525-5* in 1994. *TRADOC PAM 525-5* states, "Thus, at the same time, the Army must examine alternatives and explore new ideas that will ensure quick, decisive results in War and success in military operations other than war (MOOTW) — at the least cost in lives and national treasure."²²

Coupling information dominance with precision fires would allow decisive strikes throughout the depth of the battlespace. Reliance on the advantages of precision fires will be critical in future conflicts. As a predominantly continental based Army and Marine Corps, the chance of getting a sufficiently large maneuver force into any theater fast enough to affect the outcome is slim with present limitations in force projection capabilities. Smaller maneuver forces presently do not have the ability to achieve decisive results against larger forces. Firepower delivered by air, sea and land will be the key element to achieve quick and decisive results. However, if the strategic goals require

²¹ *Looking to the Future, TRADOC's 20th Anniversary Seminar on Future War* (TRADOC: Ft. Monroe, VA, July 1993.) Direct quotes from GEN Franks, "Winning in the eyes of the American people, is quick and decisive, with few casualties." "This requires continuing modernization, fielding systems that can outmatch any adversary—an effort that ultimately saves soldiers' lives." Direct quote from GEN (Ret) Starry, "...that quick decisive success with minimum friendly casualties will be imperative."

²² United States Department of the Army, Training and Doctrine Command, *TRADOC PAM 525-5, Force XXI Operations* (Ft. Monroe, VA, August 1994.), 1-6.

the military to hold ground and maintain a secure environment, it will not happen with firepower assets alone.

Military leaders were convinced that the American resolve cannot stand in the face of large numbers of casualties on the future battlefield. As a result of this aversion, the military again falls back onto the virtues of firepower to minimize casualties. There is always a threat of repeating the mistakes of Vietnam with an overreliance on firepower. With the future capabilities of firepower systems, it is easy to believe that firepower and destruction will rule the battlefield. As in Vietnam, if the military force does not exploit the effects of firepower with maneuver, the endstate may never be achieved.

The 1994 version of *TRADOC PAM 525-5* did not solely endorse firepower as the “silver bullet” of the future battlefield. On the contrary, it emphasized the continued importance of maneuver forces coupled with the effects of firepower to achieve the desired endstate. *TRADOC PAM 525-5* does state that “The relationship between fire and maneuver may undergo a transformation as armies with high technology place increasing emphasis on simultaneous strikes throughout the battlespace...”²³ The focus is to not override maneuver theory with firepower theory, but to find the proper tailored balance for each contingency encountered in the future.

Joint Vision 2010 published in 1997 also indicated a change in doctrinal concepts. This document states that “By 2010, the U.S. military should be able to change how they conduct the most intense joint operations. Instead of relying on massed forces and

²³ Ibid., 2-9.

sequential operations, they will achieve massed effects in other ways.”²⁴ These massed effects will be achieved through information dominance and precision systems with greater range. Like *TRADOC PAM 525-5, Joint Vision 2010* goes on to indicate that maneuver forces will still be required to exploit the effects of firepower.²⁵ There remains an emphasis on balance between the two that can be tailored to the mission requirements.

In 1997, the *Army After Next Insights Brief* prepared by U.S. Army TRADOC also placed a renewed emphasis on firepower in its concept of “Vertical Envelopment.” This vision of combat twenty-five years from then relies on systems that give the commander an extended operational reach with rapid maneuver forces that can exploit the effects of fires. This method of warfare will focus on the rapid and near simultaneous disintegration of the enemy’s center(s) of gravity.²⁶ Termination will be achieved through disintegration using the effects of attrition, maneuver, and cyber shock.²⁷ This document also addresses the fragile balance between firepower and maneuver, and acknowledges that maneuver technology needs to advance rapidly to close the gap with firepower.

Many experts believe that evolving theory relies too heavily on the elements of firepower. Lieutenant General Paul Van Riper (USMC) and Major General Robert Scales (USA) lamented the overemphasis on firepower in their 1997 article *Preparing for War in the 21st Century*. Van Riper and Scales warn that an overreliance on firepower will cause failure on the future battlefield. Potential enemies were already devising ways

²⁴ *Joint Vision 2010* (Office of the Joint Chiefs of Staff, Pentagon, Washington D.C., 1997), 17.

²⁵ Ibid., 18.

²⁶ *Army After Next Insights Brief*, COL Bourgoine (TRADOC, Ft. Monroe, VA, 1998), 7.

²⁷ Ibid., 18.

to offset the advantages of U.S. precision systems. As discussed in Chapter 1, this is eerily similar to what is happening in Iraq and Afghanistan today.

Van Riper and Scales felt that precision firepower lends a false sense of security by keeping soldiers out of harm's way, exercising surgical strikes and minimizing collateral damage. Both argued for renewed focus on maximizing maneuver capabilities and balancing maneuver with firepower on the future battlefield. Their bottom line, "America's next war, like those that have preceded it, almost certainly will be won—or lost—on land."²⁸ Scales continues this argument in his recent article in the *Armed Forces Journal*. He stated when discussing today's enemy, "The enemy chooses to fight as infantry because he can win the infantry fight."²⁹

As history proves, all of the above concepts were solid and correct. Both major combat and irregular warfare operations in Afghanistan and Iraq lend credence to them. The concerns of Van Riper and Scales were validated in Phase IV stability operations, as the enemy adopted irregular methods of warfare. Much intellectual energy has been expended in the past few years trying to adjust to the present and future conflict.

The 2005 version of *TRADOC Pam 525-3-0, The Army in Joint Operations*, does a commendable job of trying to identify the future enemy along with the force and doctrinal concepts required to counter this new threat. This document clearly outlines the complexity of the future environment. It is discussed not only from the standpoint of how the enemy will fight, but also from the standpoint of multinational and interagency integration.

²⁸ Paul Van Riper and Robert Scales, *Preparing for War in the 21st Century, Strategic Review* (Summer 1997), 15-18.

²⁹ Robert Scales, *Infantry and National Priorities*, *Armed Forces Journal*, Gannett (December 2007).

The future joint operating environment will pose significant challenges across the spectrum of conflict. National strategic guidance and the projected operating environment demand a joint force that can operate efficiently across the entire spectrum. This force must provide versatile maneuver formations that can dominate on land throughout the entire joint operations area. It must present an overwhelming and wide array of threats that compels the enemy to succumb rapidly.³⁰ This concept relies heavily on maneuver forces to initially dominate on land and subsequently maintain security.

The *Joint Operational Environment* maintained by the U.S. Joint Forces Command proposes that the next two decades will be full of considerable instability. This instability will be caused by state, non-state, and transnational actors that will threaten violence via terrorism and other irregular methods to pursue their interests. This environment poses a wide variety of problems including terrorism, insurgency, civil war, state-on-state, or coalition conflict. Shattered societies that are characterized by an absence of rule of law will only complicate these operations.³¹ In most of these situations the first requirement will be to establish security and then maintain it. This will require a maneuver force that allows the Joint Force Commander to maintain control of the situation on land and unparalleled firepower that can rapidly destroy enemy formations as they arise.

TRADOC Pam 525-3-0, The Army in Joint Operations identifies three enemy defeat mechanisms that are pertinent to the firepower versus maneuver discussion. They are; destruction, dislocation, and disintegration. They are defined as:

³⁰ United States Department of the Army, Training and Doctrine Command, *TRADOC PAM 525-5, The Army in Joint Operations* (Ft. Monroe, VA, April 2005.), 39.

³¹ Ibid., 41.

Destruction. Destruction applies combat power to physically destroy enemy capabilities. Historically, a higher rate of destructive effects does not always lead to rapid decision, since well-disciplined and well-defended forces are often able to endure high levels of destruction before being compelled to capitulate. Precision improves the impact of destruction. Destruction remains a key element of defeat for future conflict, but is more effective in combination with disintegration and dislocation.

Dislocation. Defeat by dislocation emphasizes the use of maneuver of combined arms forces to obtain significant positional advantage over the enemy, in a manner that renders the enemy's dispositions less valuable, perhaps even irrelevant. In effect, dislocation forces the enemy to choose to accept the neutralization of part of their forces or to accept higher risk of destruction in efforts to reposition forces for more effective employment. Dislocation is key in stability operations, where the latent destructive potential of well-positioned land forces can deter aggressors and reassure neutral populations

Disintegration. Disintegration exploits the integration of dislocating and destructive effects to shatter the coherence of the enemy's plans and dispositions. It focuses on critical capabilities and decisive points that, if attacked effectively, will lead to more rapid collapse of the enemy's capability or will to continue to fight. In many cases, disintegration will emphasize the destruction of the enemy military "nervous system," that is, those capabilities that enable them to see, know, and effectively command and control. The greater the simultaneity, the stronger the disintegrative effects.

A combination of these defeat mechanisms can be used across the spectrum of operations to dismantle the enemy's defenses.³² They are just as critical to establishing a lasting secure environment as they are to defeat a symmetric enemy in major combat operations. Destruction is always easy to see and evaluate. Dislocation and Disintegration are a bit harder to see and quantify on the battlefield. The degree of difficulty gets exponentially harder in Irregular Warfare.

³² United States Department of the Army, Training and Doctrine Command, *TRADOC PAM 525-5, The Army in Joint Operations* (Ft. Monroe, VA, April 2005.), 12.

Through this concept of offensive operations, the combination of all-source precision engagement (firepower) and dominant position (maneuver) by ground forces is critical to the enemy's destruction, dislocation, and disintegration. Maneuver threatens enemy decisive points and centers of gravity and firepower compels the enemy to disperse, avoid movement, and seek sanctuary. Failure to reposition makes the enemy vulnerable to piecemeal destruction and should the enemy attempt movement on any significant scale - whether to attack or defend more effectively - he exposes himself more fully to fires. Decisive maneuver, especially during major combat operations, combines maneuver and firepower to pose a multidimensional threat that the enemy cannot easily escape or counter.³³

The defeat mechanisms of dislocation and disintegration are even more complex in irregular warfare and the opportunities for direct destruction of enemy capabilities are less frequent. If western militaries are to bring security to an unstable environment, key adversary capabilities must be destroyed, their organizations disintegrated, and dislocation of their position - particularly as it relates to the population. All of these are all critical for irregular warfare and all are critical to sustain a secure environment. They are even more vital in stability operations. In this type of war the joint force must dominate on land.³⁴

The tasks facing the future joint force are daunting. As discussed in Chapter 1, full spectrum dominance is much more difficult than it sounds, especially when budget considerations are included in the formula for joint force transformation. Traditional

³³ Ibid., 12.

³⁴ Ibid., 13.

threats continue to possess significant conventional sea, air and land forces. As discussed earlier, many adversaries are adopting irregular warfare methods to counter the U.S.' overmatching conventional capabilities. Weapons of mass destruction in the hands of traditional or irregular adversaries pose a catastrophic threat and the joint force cannot ignore disruptive threats borne by breakthrough technologies. Clearly the force must maintain competencies that allow effective operations across a broad spectrum.

Firepower versus Maneuver, Final Analysis

In the final analysis, America's military and its civilian leadership must design a doctrine and force structure capable of succeeding across the full spectrum of military operations. AirLand Battle concepts proved more than adequate up until 9/11, but now a more comprehensive approach needs to be taken to counter threats just as effectively at both ends of the spectrum. The relationship between firepower and maneuver will be critical to this balance. To better analyze the relationship between the two, the essential characteristics of the future Army as outlined by General Sullivan are as effective today as they were yesterday to gauge the path chosen for future doctrine and force development. Those essential characteristics are readiness, deployability, versatility, and sufficiency.

Readiness is critical in that military forces must deploy on short notice, prepared to succeed in a myriad of different types of operations. These forces must maintain a high level of proficiency across a wide spectrum of individual and collective tasks as in many cases there will be little or no time for training prior to mission execution. Advantages gained by firepower with the advent of PGMs will enhance this readiness for warfighting, but little to enhance the military's ability to conduct stability operations.

The only thing that these systems may enhance is deterrence of any aggressors during the operation. Because of the increased demands of insurgency operations, strong and well-trained maneuver forces prepared to span the spectrum of conflict will remain relevant.

Deployability has become more critical as the U.S. military becomes more of a CONUS based military. Heavy forces require significant lift assets to get into a foreign theater in the rapid manner prescribed by future doctrine. To get a large enough force into the theater that can act decisively will be even more of a challenge. The U.S.' armed forces need to either greatly increase the amount and capability of lift assets, or shrink the weight of the deploying force, or a combination of both to fulfill the future requirements.

Firepower adds tremendous advantages in deployability. Precision systems will allow lighter forces to have greater effects on tomorrow's battlefield. They will not require as much lift to get in to theater, nor will their logistics requirements be as great as those required by "dumb" bombs. If PGMs truly can accomplish the promise of "one round—one kill," the ammunition tonnage required to achieve the desired effects will be much less. However, victory does not always equate to killing the enemy. As discussed in Chapter 1, to establish a secure environment it is often more important to have a force presence rather than kill the adversary. By denying the enemy sanctuary in these missions, you deny their freedom of action, thus negating their advantage.

Versatility will be critical to handle the full spectrum of military missions, and maneuver is much more versatile than firepower. The United States cannot afford two separate armies; one for all out war and one for stability operations. The future force must be versatile enough to go from the most placid of operations to total war. Humanitarian assistance can rapidly escalate in to combat operations as happened in

Somalia. Firepower contributes to versatility on the top end of the spectrum (offensive and defensive operations). By reaching greater operational depths with accurate fires during war, PGMs enable the commander to rapidly attack almost anywhere and anytime he desires in the theater.

Sufficiency is the key on the future battlefield. A force projection military must not only be able to get into a theater rapidly, but it must do so with sufficient combat power to decisively defeat the enemy and subsequently transition to Phase IV, stability operations. As seen in the previous scenarios, every time an inadequate force was piecemealed into theater a losing war of attrition was usually fought. When adequate forces based on the principal of firepower were deployed into theater quickly, a rapid and decisive war of annihilation was fought against symmetric enemies. In these scenarios, firepower coupled with information dominance ruled the battlefield. However, the threat was symmetrical in this case. Sufficiency demands a balance of firepower and maneuver. The firepower rapidly destroys enemy formations and infrastructure while maneuver establishes a large presence which will create and maintain a secure environment. This secure environment then will enable stability operations to flourish.

Firepower clearly has the advantage over maneuver in wide open terrain in the immediate future. Technological advances in the areas of information dominance and PGMs make this possible. But as Scales and Van Riper warned earlier, enemy leaders will learn how to counter this threat. In this open environment, highly skilled and quick maneuver forces will continue to play a major role, but these forces must be the exploitation forces that leverage the opportunities gained by firepower.

In stability operations maneuver forces must continue to take the leading role. These types of operations require soldiers on the ground interacting with the inhabitants and other agencies to achieve the desired endstate. Security is the first requirement in this type of environment. Secure environments allow for stability actions and growth to occur. Present and future enemies continue to drive U.S. forces down from major combat operations towards insurgency warfare, thus stability operations are garnering more importance every day. Rapidly deployable and versatile maneuver forces will become even more critical in the future.

Conclusions on the Future of Warfare

On the twenty-sixth of October in the year 1415 an English army of six thousand archers, one thousand men-at-arms, and a few thousand footmen defeated a French army five times its size at the Battle of Agincourt. The French were not prepared to face the enemy that they encountered. They were prepared to defeat an enemy comprised of mounted knights, and in turn were decimated by the longbow. The British in turn failed in preparation prior to World War I by only preparing to perform colonial military missions while ignoring the fact that they may again fight on the plains of continental Europe.

A strategy or doctrine that is based on one type of enemy or mission may prove fatal in another. History is a witness to the failings of ill-prepared militaries. Approaching the capabilities of modern firepower with the same narrow-mindedness that post-World War I leaders approached technological advances in aviation and armor may prevent the armed forces from maximizing their effects on the present and next battlefield. While western advantages in firepower negate numerous enemy options,

letting this advantage atrophy will only let the enemy regain those options. But for the foreseeable future, the U.S. and its allies will be fighting to promote security in remote and austere environments around the globe. These environments require a modernized joint force with the following characteristics: Expeditionary, Networked, Knowledge Empowered, Interoperable, Tailorable, Precise, Fast, Enduring/Persistent, Agile, Lethal and Resilient.³⁵ This joint force must be based on a modernized maneuver force that is optimized to excel in maneuver warfare.

The future security environment will be increasingly volatile, uncertain, and complex. Conflicts will range from short duration, smaller scale contingencies to major combat operations on a theater scale. U.S. joint forces, in cooperation with interagency and multinational partners, must generate full spectrum dominance, and have the ability to confront and control combinations of conventional and unconventional threats across the Range of Military Operations.

This paper argues that a continued balance of firepower and maneuver is the key to countering the threat across the range of military operations. What needs to change is the method by which the U.S. and its allies employ not only the joint/coalition force, but how they apply a “Whole of Government” approach to security and stability issues around the globe. Essential to this balanced force, is a modernization plan that brings maneuver to the level of firepower. As discussed earlier, technology has greatly improved the accuracy, timeliness and lethality of firepower while maneuver is still based on foot power and turbine driven machinery developed in the mid-Twentieth Century.

³⁵ *Capstone Concept for Joint Operations, Version 2.0* (Joint Forces Command, Norfolk, VA, 2005). These are the Joint Attributes desired for the Joint Force as listed in this reference.

Emphasis must be put on the modernization of land forces to ensure they have the capability and capacity to deal with 21st Century threats.

Chapter 4: Dominant Land Forces for 21st Century Warfare

Impacts on the Operation Environment

The environment that armies, navies and air forces operate in has changed distinctly over the past couple of decades. Three major factors are impacting these military operations. The first major impact revolves around the threat. The threats are not the traditional ones discussed earlier in this paper. They are however, themes that have been developing since Vietnam and evolved even further in the Balkans. Just like the enemies of today, those enemies adjusted their actions to offset America's clear advantage in firepower. In both Vietnam and in the Balkans today, the western militaries struggle to bring security to the populace, which in turn leads to a more stable environment.

One of the new threats of today is typified by Al-Qaeda and their associated movements. These threats are cellular in structure and loosely connected to each other. They are not motivated by politics, geography or national fervor, but religious driven ideology. This forces the U.S. and their allies to fight in the realm of the hearts and minds, more so than on the ground, in the air, or on the sea. Organizations such as Al-Qaeda, are very hard to detect, and harder to attack using "Cold War" methods and technology. Just as AirLand Battle prepared the military for the Cold War, a new approach to this kind of warfare can better enable the west to win a victory.

The second major condition impacting military operations is globalization. Although globalization can have many positive effects, especially in the economic realm, the transparency it produces makes military operations increasingly difficult. The actions of one soldier, sailor, airman or marine can be instantly captured, shaped and broadcast

worldwide for the purposes of supporting the enemy's message. Global transparency also enables the daily broadcast of the wealth possessed by the western world to all corners of the Earth. The people of the world see the wealth and freedom of these western populations and they want the same things now, while many others resent it. This effect of globalization stimulates confrontation and conflict in these societies. When the governments of these nations cannot provide the same comforts, freedom and liberty as seen in the west, it degrades their legitimacy in the eyes of their populations.

The third major factor effecting military operations is the recent trend to rely more on military power to respond to global natural disasters to ease human suffering. It would be hard to back-track on this pattern now. The recent responses to earthquakes in Afghanistan and Pakistan, to the tsunami in Thailand, the military response to hurricane Katrina here in the USA, have set a precedence that the U.S. Government will use the military to respond to natural and human disasters. The military has displayed unmatched skill in their ability to respond rapidly with tremendous capabilities in these instances. No other organization worldwide has the depth and capacity to do what western militaries can in these situations.

All three of the factors discussed above require a well trained and well equipped ground force. More than ever before, these types of operations are proving that "boots on the ground" will be critical to success. Interestingly, for the past ten years there has been a push from government to trade manpower for technology. Transformation efforts to buy systems that can replace people have been the norm, but now the U.S. finds itself in a position where people matter. The U.S. joint force is operating in an environment of complex terrain that is frequently dominated by people. If the U.S. wants to dominate

and secure that terrain, they have to understand the people in that terrain and then put forces in that terrain to control it. The west has finally come to realization that “boots on the ground” is important with the recent decision to add to the size of the Army, Marine Corps and Special Operations Forces.

National Security in the Global Environment

The national security of the United States of America is inextricably linked to global security. It would be easy to think the U.S. could close down its borders and isolate the populace from any external threats, but this is only a pretense in today’s global society and economy. The country could not prosper or grow economically and surely would waste away should it revert to isolation. Therefore, the U.S. and its allies must face the realities of the struggles around the globe. One of those major struggles will be war.

This global environment will continue to be marred by conflict. As societies continue to evolve there are constant friction points that will continue to flare. Globalization continues to bring about the rise of more and more security challenges. State boundaries have less of impact on the containment of conflict as religiously based ideologies are promulgated by Al-Qaeda and their associates. The demographics below, coupled with these other factors below will continue to cause turbulence well into the 21st Century:¹

- Urbanization – by 2020 – estimated 60% of world’s population will be located in an urban environment

¹ Statistics taken from various U.S. Army TRADOC briefings discussing the effects of demographics on global security conditions and United States Department of the Army, Training and Doctrine Command, *TRADOC PAM 525-5, The Army in Joint Operations* (Ft. Monroe, VA, April 2005.).

- Mega-cities – five of 10 projected mega-cities are located along major tectonic fault lines
- Youth Bulge – huge projected youth bulge, 15-24 years old, in underdeveloped countries
- Energy – by 2030 China's oil demand to double, India to triple; no slack in Global energy markets.
- Larger role in disaster relief; pandemic threats, dramatic climate change, deforestation.
- The information age speeds the required processing time of nearly everything. The amount of available data can help confuse as well as assist in the security environment.
- Enemies will continue to target the U.S. national will
- Distributed virtual enemy networks continue to be hard to identify and attack
- Heightened awareness of the disparity between have and have-nots.

There are also many other factors that will cause global instability. Some of these are:

- Competition for scarce resources - water, food, fuel, power
- Competing ideologies, ethnicities, and religions
- Disenfranchised minorities
- Enduring influence of cultural linkages
- Migrations: refugees and immigrants
- Stateless populations
- Border disputes
- Ungoverned areas
- Quests for regional hegemony
- Transnational crime and drug trafficking

Ideological enemies do not limit themselves to state boundaries. Their battlespace has become the entire globe. They will use the information revolution to their advantage by manipulating the populace. The enemy is quick to adapt to the changing environment while the U.S. governmental agencies and departments are built on Cold War models that do not lend them the agility to keep up with the enemy's decision cycle. Change is needed at the highest levels of the federal government that enable agencies and departments to get ahead of the enemy's decision cycle.

Just as it was in the history discussed earlier in this paper, today, war remains a conflict between two opposing wills. War is sometimes an up-close-and-personal, very violent affair. But war can also be very dispersed and fragmented as is seen by today's irregular war being waged against terror. This type of warfare requires a well trained and well equipped military to lend security to the environment, but it is not exclusively military power that brings final resolution to a conflict. It takes all the elements of national power; diplomatic, economic, information and military. The U.S. must find a way to synchronize those elements and then build synergy if they are to indeed stabilize environments that in turn lend legitimacy to the governments in these war torn lands.

As discussed in the previous chapter, the enemy will continue to develop capabilities to counter the U.S. strengths. Biotechnology, Nanotechnology, Information technology and Hybrids (compilations of present weapons) are increasing weapons lethality and proliferation. Along with a change in how the U.S. government operates in this environment, modernization is critical to the future success of military operations in this global environment. Modernization in time of war is not always popular with those concerned with budgets, but a necessary task if the U.S. is to stay in front of this enemy. The military is at war, but the country has yet to mobilize its full power.

In 1950 the U.S. had sixty-four ground active and reserve divisions in the Army. Today the U.S. has eighteen. From 1950 to 1989, the U.S. Army was deployed in ten deployments that could be considered as "full-spectrum" operations. Since 1989, there have been forty such deployments.² This reinforces the point made earlier that the U.S.

² Kenneth Anderson, *History of U.S. Military Operations Since WWII* (New York, Crescent Books, 1992). These numbers are based on the authors own research mainly from the cited source by interpreting of the task, purpose and force structure of the deployments included in these sums.

is trying to accomplish much more with much less force structure. Couple this with numerous future decades of persistent conflict, and it exposes the gravity of the situation the U.S. national leaders face. Just to lend more perspective, consider the fact that the forces fighting this war are using technology from the mid-twentieth century because of a lack of prolonged and well thought-out modernization plans.

Today's land forces are poised to strategically deploy forces to any operational environment. However, these same land forces are not optimized to rapidly deploy, see first, understand first, act first, finish decisively and reengage at will under all conditions and environments ranging from peacetime engagement to major combat operations primarily because they are a hybrid mix of 20th and 21st Century capabilities. Continued modernization is critical to current and future success for these expanding requirements.

Emerging force modernization efforts such as Future Combat Systems (FCS)-derived capabilities as the centerpiece will improve the land force's ability to provide persistent security and sustain U.S., coalition and partner-nation land power dominance well into the 21st Century. The "FCS-enabled" modular force provides essential information direct to the Soldier, Marine and small unit from a robust integrated network with a suite of sensors across its zone of employment. All Brigade Combat Teams (BCT) with attributes derived from the development of FCS will improve the capability and capacity of general purpose forces to conduct operations. This allows commanders to determine the appropriate military solution for their operational requirements. Modernized land-dominant formations offer unique and singular capability to successfully compete in the highly complex security environment of the 21st Century.

It Begins with Security

As discussed in Chapter 1, security dominates in these environments. Without a secure environment the sources of stability cannot flourish because of the threat. Economic prosperity, educational development, free elections, functioning utilities, and many more societal functions will be untenable in a non-secure environment. Once these stability actions become second nature and ingrained in to the everyday workings of society, then the local government begins to gain legitimacy in the eyes of the indigenous population and the region will become stable over the long term. Stability and legitimacy of host nation governments will be the key to not just an exit strategy, but also improve global and U.S. security.

Security is imperative in these environments. Security starts at the grass-roots, local level. In the absence of local security; regional, national and global security may not be attainable. In the absence of local security, you cannot expect the other elements of national power to even show up to the fight. In the absence of local security, you have a situation of persistent conflict that offers no chance for stability to flourish. The U.S. military can enable the other elements of national power by providing that security directly by the employment and/or deployment of forces, and by helping partner nations to build capacity. All of this is designed to help develop a security situation which allows those other elements of national power to be employed. In the absence of that, the military will remain on the ground until the U.S. national will demands their return. Upon the return of the military, chances are the environment will revert to chaos if a stable and legitimate government is not left its place.

Chapter 5: Final Conclusion

The old saying “a picture is worth a thousand words” is apropos in the graphic depicted below (figure 9). The picture is of a U.S. Soldier patrolling the streets of Baghdad just as an Improvised Explosive Devise (IED) detonates. The point of interest is not the Soldier, but rather the young boy near the Soldier. As the IED detonates, the young boy immediately ducks for cover behind the U.S. Soldier, where he feels secure. This is an



Figure 9, Iraqi boy ducking for cover

incredible testimony to the power of having well trained and equipped dominant land forces that can lead the effort to secure hostile environments.

The Joint force must commit to building, maintaining, and sustaining a full spectrum force. This force must be able and ready to respond to multiple, diverse challenges across the entire Range of Military Operations. The enemies of the west will continue to probe the seams of America’s national strengths looking for vulnerabilities. Future adversaries are unlikely to be deterred simply by inferiority in military power. They can easily obtain “of the shelf” technology that can be quickly optimized for war. This offers opponents the opportunities to acquire alternative low cost weapons to attack the U.S. asymmetrically. These enemies will continue to fight among the people as long as they provide the sanctuary needed to conduct operations. It will require modernized

and versatile land forces to counter this threat. Meanwhile, near peer competitors continue to increase budgets to acquire conventional war fighting hardware. Therefore, the U.S. and their western allies cannot forget the importance of advanced and lethal firepower to counter the enemy's numerical superiority.

Multiple threats using a myriad of techniques, some irregular, some disruptive, and others more conventional in nature will continue to characterize future conflict. The U.S. and its military forces, often with allies and other interested nations, will remain engaged in complex power struggles worldwide in order to protect national interests. As land forces continue to evolve they must continue to strive for a balance of creating soft and hard power capabilities in order to fully meet challenges across the spectrum of conflict. That hard power includes a balance between maneuver and firepower.¹

The Chief of Staff of the Army, General George Casey, made the statement that "the next several decades will be ones of persistent conflict." He further elaborated that persistent conflict was defined as "a period of protracted confrontation among state, non-state, and individual actors fueled by expanding Islamic extremism, competition for energy, globalization outcomes, climate and demographic changes, and the increased use of violence to achieve political and ideological ends."² Senior leaders obviously see the war on terror going on far beyond Iraq and Afghanistan. This has incredible implications on the military forces of the U.S., as well as the rest of the governmental agencies and departments. Military forces and government staffs must be postured, balanced and trained to face this ongoing threat.

¹ Donald Lisenbee, Colonel, U.S. Army TRADOC, A View of the Future: Rebalancing Army Concepts, 20 Feb 08. Final thoughts and ideas were extracted from this concept paper and the ideas contained in this thesis.

² General George Casey, Chief of Staff of the Army, National Press Club, 14 August 2007.

History has shown time and again that western militaries rarely get it right prior to the next war. The only modern example that seemed to get it right was AirLand Battle. It is time to adjust the western approach to war. The approach is too centered on major combat operations rather than the remainder of the spectrum. As opposed to exporting combat power for the purposes of fighting war, it may be time to deploy forces to establish and maintain security. As stated earlier, without security, there is little chance of stability. If a government cannot provide security and basic necessities for their populace, they will not gain legitimacy. Therefore, across the range of possible contingencies the U.S. must establish an overarching security environment in order to successfully employ all elements of national power.

If the notion of persistent security proves true in the future, then the western militaries must be postured with a modern dominant land force to deploy, intercede and inundate these societies with a force that can immediately create secure environments. These secure environments then will lead to stability which in turn lends legitimacy to the governments of the indigenous populations. This in turn creates a more secure and stable global environment. A more stable globe will lead to better security at home.

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Biographical Sketch of Author

LTC (P) E. J. Degen: Is presently a student at the Joint Forces Staff College and previously served as Special Assistant to GEN William S. Wallace at TRADOC. He has commanded artillery units at all levels through battalion and served as the Vth Corps (US) Chief of Plans during Operation Iraqi Freedom I. He holds a Masters of Military Arts and Science from the School of Advanced Military Studies and is the co-author of *On Point, the United States Army in Operation Iraqi Freedom.*